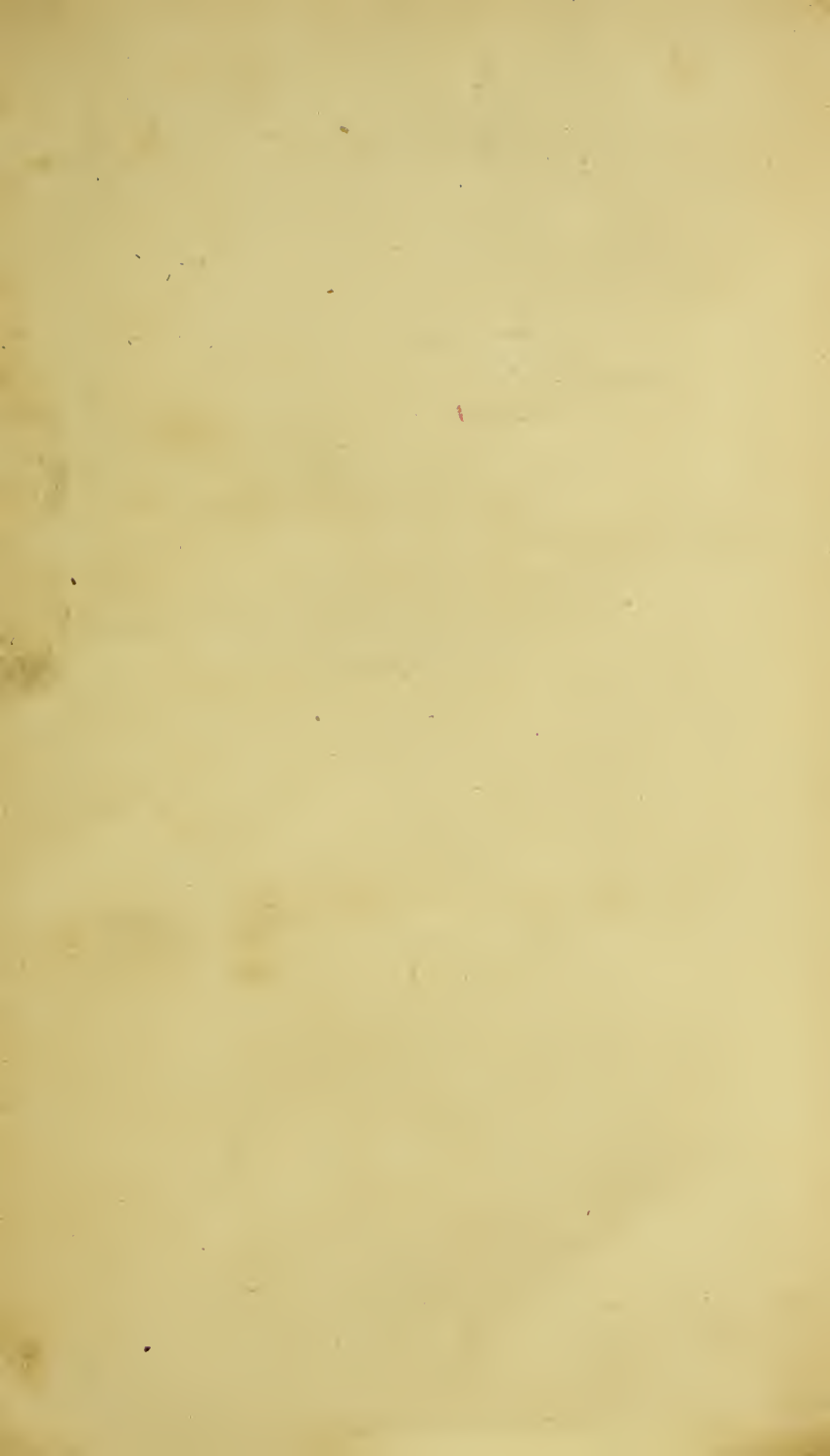


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THE
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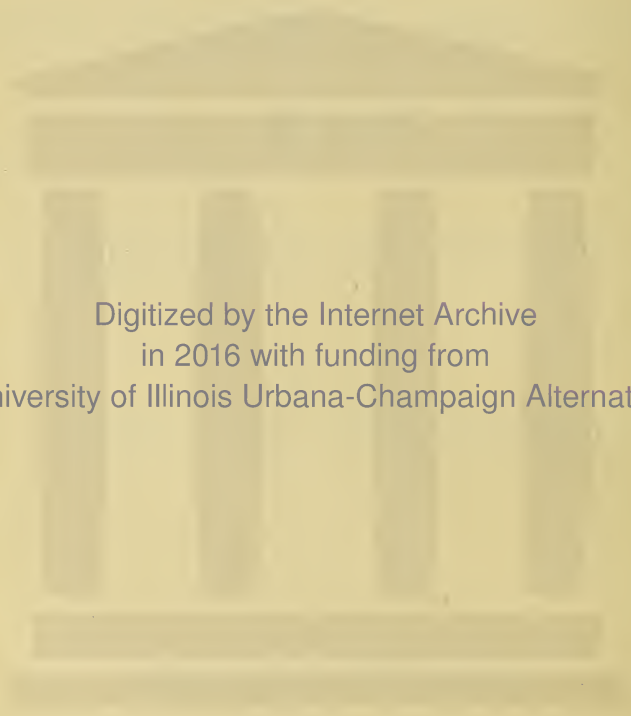
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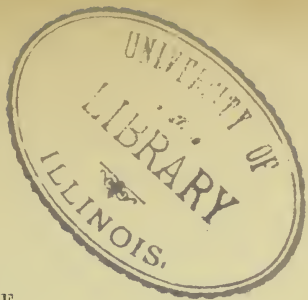
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Communications and Cases.

A SUMMARY OF REPLIES TO A SERIES OF
QUESTIONS ON BREEDING OF ANIMALS.

By G. W. VARNELL, Assistant-Professor at the Royal
Veterinary College.

THE readers of the *Veterinarian* will remember that the questions proposed on the above subject were principally of a physiological character, and many of them were of such a nature that few persons, perhaps, were in a position to answer; while books on physiology, both human and comparative, are silent on the subject; hence we are desirous of putting on record the opinions we have already received.

The profession will have observed, that we did not ask how horses were bred, or the rules which breeders follow to secure the best stock, these being matters of detail, only to be learned by experience; but we wished to know whether science could not assist the practical breeder, and thus bring physiological laws to bear on the question of propagating the species, in a manner that has not hitherto been effected. We regret to say, that the information furnished us has not been so full as we could have wished; but if we should hereafter learn that our questions have caused the junior members of our profession to work in the sense we speak of, we shall have less reason to regret our not being able at present to give all the assistance we are desirous of doing to breeders.

His Royal Highness Prince Albert, in his recent speech at Birmingham, has so well put these, our opinions, before the public, that we shall be excused if we bring his observations

before the profession, they being applicable to the subject of breeding.

The Prince says:—"The introduction of science and art, as the regulators of productive industry, is destined to play a great and important part in the future development of this nation, and of the world in general.

"Science is eminently practical, and must be so, as she sees and knows what she is doing; while mere common practice is condemned to work in the dark, applying natural ingenuity to unknown powers to obtain a known result. Far be it from me to undervalue the creative power of genius, or to treat shrewd common sense as worthless without knowledge. But nobody will tell me that the same genius would not take an incomparably higher flight if supplied with all the means which knowledge can impart; or that common sense does not become, in fact, only truly powerful when in possession of the materials upon which judgment is to be exercised.

"In all our operations, whether agricultural or manufacturing, it is not we who operate, but the laws of nature, which we have set in operation. It is, then, of the highest importance that we should know these laws, in order to know what we are about, and the reason why certain things are which occur daily under our hands, and what course we are to pursue with regard to them. Without such knowledge we are condemned to one of three states:—Either we merely go on to do things just as our fathers did, and for no better reason than because they did them so; or, trusting to some personal authority, we adopt at random the recommendation of some specific, in a speculative hope that it may answer; or, lastly—and this is the most favorable case—we ourselves improve upon certain processes; but this can only be the result of an experience hardly earned and dearly bought, and which, after all, can only embrace a comparatively short space of time, and a small number of experiments. From none of these causes can we hope for much progress; for the mind, however ingenious, has no materials to work with, and remains in presence of phenomena the causes of which are hidden from it. But these laws of nature—these Divine laws—are capable of being discovered and understood, and of being taught, and made our own. This is the task of science; and, while science discovers and teaches these laws, art teaches their application. No pursuit is, therefore, too insignificant not to be capable of becoming the subject both of a science and an art."

We now proceed to our analysis.

THE ENTIRE HORSE.

Our correspondents inform us that, from the age of 4 years up to 30, an entire horse is used for the purpose of getting stock. On this question some very curious facts have been furnished us as to the advanced age at which horses will procreate their species. Mr. Gibbon speaks of a horse that got several foals when 33 years old. Many well-authenticated instances can be found of horses getting stock quite as late in life as Mr. Gibbon has stated; and we have heard, on reliable authority, of horses procreating at even a much later period of life. I perfectly well recollect a half-bred entire horse, which had been employed as a hunter until he was 20 years of age, and up to which period he had never covered a mare; after this he was used as a stallion only, and continued as such until he was 28 years old. He got a great many foals every season; but it was generally doubted whether his produce had that amount of stamina that they would have had had their sire been a younger horse.

Our correspondents are somewhat inexplicit as to the earliest periods at which foals may be got; and little is said by them relating to entire horses being put to mares at a very early age, although it is stated that this occurs as early as 2 years old. Mr. F. Chamberlain says, that early sexual intercourse in excess does occasionally produce impotency. Mr. J. T. Merrick believes that it tends to that effect only when carried to excess at an early age. Mr. W. T. Stanley remarks, that excess of sexual intercourse at an early age temporarily debilitates the animal, and that in the following season he will have regained his vigour. Mr. Barker observes, that two-year-old horses are allowed but few mares during the first season; hence the few cases of impotency arising from early excessive sexual intercourse among them. In bulls, however, it is by no means uncommon for both vigour and development to be arrested, from early and too frequent access to cows.

Nearly all our correspondents agree that seminal emissions do take place in the entire horse; and that they are not involuntary, but depend generally upon excitement, and especially from the presence of mares. It must also be allowed, that if this act does take place to excess, debility follows. But although such is the case, and in hot climates in particular, it is not so in this country to any injurious extent, so far as my experience goes. Nevertheless, breeders should make it

a rule to keep male animals that are intended to be used for the purpose of getting stock as much by themselves as possible, so as to ensure their full vigour when needed.

On the question of the influence of fat and exercise inducing impotency, we think our correspondents do not lay sufficient stress. It would appear from them, that thoroughbred horses get only from two to three hours' exercise in the day; and some are only allowed to pace their own loose boxes. Is this exercise enough, we would ask? Is not the state of the cart-stallion better, who travels his sixty miles in the week? But is the excessive quantity of fat usually seen on cart-stallions desirable? Is it necessary, or is it merely for show? May it not be the cause of so many cart-mares not being stinted? Cannot statistics be obtained, showing that an animal taken from regular, but not too hard labour, and in good working condition, is the most likely to procreate the best foals, and perhaps the greatest number also? These are questions we submit to our readers' consideration.

Our correspondents all agree that the number of mares put to horses during the season, averages from forty to seventy; and that from an hour-and-a-half to two hours is the usual time between the acts of copulation. I would add that, on some occasions, I have known as many as three or four mares covered in as many hours. Is this in accordance with physiological laws? May not the large number of weak, leggy, bad-constituted animals ("weeds"), depend upon inattention to some of these causes? and would not a knowledge of this save a man, who puts a valuable mare to a very superior stallion, much chagrin when he finds the produce comparatively good for nothing?

This part of our subject is well worth further investigation; and we should be glad of the opinion of practical men on this point.

Another matter having reference to the entire horse, on which our correspondents likewise agree, is, that the quantity of mares put to a horse in one season is very large; and that the power of the horse for such large numbers is obtained by giving stimulating food. This may be very well for the owner of the horse, but is it a system to be tolerated by the practical breeder? Ought he not to take steps to ascertain how many mares have been covered by the horse he employs? Surely it must be a short-sighted view of the matter to prefer a "cheap mount." Yet I believe many would say that if low fees are taken, the numbers must make up for the low prices paid.

Mr. Gibbon says that it is considered desirable to allow only two hours between the first and second act of copulation; but a longer time must elapse between the second and the third act, and that horses are very rarely allowed to serve more than three mares in the day if it is wished to ensure good stock. It would be well if this course were universally adopted.

It appears from the answers we have received, that the profession generally has but little knowledge on the subject of impotency in stallions. Statistics bearing on this subject, if there are any, would be gladly received by us.

THE MARE.

Our correspondents give us very little information as to the cause of sterility in mares. From the observation of Mr. Chamberlain, we infer that he inclines to the opinion that an accumulation of fat in the system is unfavorable to their being impregnated, for he says: "The most likely means to ensure the mares being stinted are, attention to the condition of the animal, placing her as much as possible in a state of nature, and the removal of all stimulating food." On the same subject Mr. Stanley says, "Change of diet, and cooling medicine given previous to the animal being stinted are beneficial."

The observations of these gentlemen agree with our opinion, namely, that fat in excess induces sterility in mares; indeed we believe it to be a very frequent cause of barrenness, still we should be glad to be furnished with some practical information on this subject. And also at what period during the time the mare is at œstrum ought she to have sexual intercourse to ensure her being impregnated? Would it be better to put her to the horse as soon as it is discovered that she has a desire for him, or just as it is passing off, or during the middle of that period? Or are there any particular signs familiar to breeders which point out the proper time for coition, so as to ensure the mare being stinted?

In answer to the tenth question, Mr. Chamberlain says, "I believe it is a common law in nature of unlike breeds to be more productive. It is so with the common-bred bull as compared with the high-bred animal. Besides which such a bull is in a much more natural condition for coition, from his not having been exposed to the same artificial mode of living, &c." Many instances are mentioned where some peculiarity has been transmitted to the better-bred descendants. I have no doubt but this will occasionally be seen,

but it is less likely than it was some time back, as the common bull is now better bred than he formerly was. This peculiarity appears rather common in the dog.

In answer to the same question, Mr. Merrick says, it is a fact that high-bred cows will frequently conceive to a low-bred bull, after having failed to one of pure breed. The experience of his own groom, who has had the management of stallions for fourteen years, is "that he has frequently noticed that well-bred mares, which have been difficult to stint with thorough-bred horses, have bred to an inferior, and subsequently to a thorough-bred stallion; but her stock by the latter has frequently showed traces of inferior blood not to have been expected from the breed of either the sire or dam."

On the subject of preventing barrenness in mares, we are furnished with but few new facts, except that, Mr. Barker says, if the mare be put to another description of horse, that it is a practice with some persons to draw blood from her during the act of copulation. But this we believe to be an old practice. Mr. Stevens states that there would be fewer cases of barrenness in mares if they were better fed, and better care were taken of them than is generally done.

In answer to our twentieth question, Mr. Gibbon replies that there is no certain rule to guide us as to whether the mare is pregnant or not until she is half, or a little more advanced in pregnancy. At which time he refers as a test to the usual mode of giving the mare a bucketful of cold water, a few minutes after which the foal may be either seen to struggle, or be felt by placing the hand on the inferior part of the abdomen a little anterior to the mammary gland.

Mr. Chamberlain says, the early symptoms appear to be, cessation of desire for the male, a less irritable state of the system, and a disposition to become fat.

The observations of Messrs. Stanley and Merrick are to the same effect.

THE FOAL.

Mr. Barker, in answer to question five, states that the offspring inherits the good or bad qualities of the sire, in preference to the dam. And in answer to question six, he remarks, "that aged sires get more fillies than colts."

Mr. Chamberlain thinks that constitutional defects are more frequently transmitted from the dam. And in answer to question seven, he says, there is a preponderance of females in all

domesticated animals; but mares of the cart breed produce more colts than fillies. Such, however, he thinks is not the case with thorough-bred stock, which may probably be explained by the "in-and-in system of breeding;" or rather a want of crossing with animals of dissimilar character. Other correspondents are of opinion that the dam is frequently at fault.

We are surprised, however, not to find the attention of breeders directed to these peculiarities, for we believe that according to the age of the parents, so will be the vigour and also the sex of the progeny. In speaking of this we would ask if "weeds" are not produced from some of the above causes? We have lately heard it stated that many of the Irish, and also persons of weak intellect, in public asylums, are the produce of those who have married first cousins.

With reference to the influence that either the sire or dam may have upon the offspring, Mr. Stanley, in reply to the fifth question, states, "the future progeny is liable to be influenced by imperfections both in breed and constitution, and these are mostly propagated by the sire. My inference is mostly derived from what I have frequently seen in my own establishment—having had several stallions which were kept purposely for breeding, and amongst them was 'Cricketer,' who, with few exceptions, was considered one of the soundest horses in existence. The only disease he had was a constitutional defect in one of his eyes. This affection was confined at first, and that for a long time, to the lachrymal apparatus principally, causing a continual flow of tears over the side of the face. The horse was in my possession three or four years, and the eye did not become worse, but later in life he became blind. His stock were animals of first-rate quality and power; and the only malady they were subject to was ophthalmia. This affection, however, was not of very frequent occurrence. I wish also to mention that I knew a thorough-bred horse called 'York.' He was lame from bone spavins, and nearly all his stock were affected in the same way, and became incurably lame; in fact some were foaled lame, or became so before they attained the age of one year."

We have already alluded to the subject of "weeds" We shall close this summary with a few additional remarks upon them by Messrs. Stevens, Gibbon, and Stanley.

Mr. Stevens thinks, that want of proper feeding of the mare is in a great measure the cause of the above description of horse. He also says that cart stallions have often far too

many mares put to them, and that at the end of the season they evince very little desire for copulation. I have often heard of its being necessary to give them very stimulating food, and use means to excite them before the act. Therefore, want of energy in the horse may be one of the causes to produce "weeds."

Mr. Gibbon says, "animals called weeds, generally inherit their peculiarity of constitution from their parents. But if a foal or yearling is kept with an insufficient supply of food, either in quantity or quality, it will become a weed. I also think they are sometimes produced from sound stock when the generative organs of the dam, having been in a state of inactivity until advanced in life, do not possess sufficient nervous influence to supply the embryo with nutrition."

Mr. Stanley says, "animals termed weeds are solely referable to the bad and injudicious crossing of sires and dams, and not from the quality or quantity of the food of the colt, which has little to do with it."

PRACTICAL REMARKS ON THE USE OF CLYSTERS IN THE HORSE.

By JOSEPH GAMGEE, M.R.C.V.S., London.

It is an express desire to record my sense of the indispensable worth of a therapeutic agent, positively valuable and at the same time simple and easy at command, that urges me to commit a few reflections to the pages of the *Veterinarian*. The simplest daily operations are those likely at times to be less considered and empirically performed; they are those which are perhaps more likely to be dealt lightly with by the systematic writer, who may chance to speak more at length of what he believes less understood and more intricate. Respecting clysters, not only is all that is written and often spoken on the subject very incomplete and incorrect, but simple enemata have not been fully appreciated in general veterinary practice. They are indicated in many more cases than those in which they have been and are usually recommended, and their effects are more important than is generally believed.

My object to-day is to convey my opinions on practices the result of thirty years' trial, and it may be said, I need not invoke theory in my support; I however own allegiance to

no practice which is not in direct accordance with sound medical and surgical principles, and which cannot stand the test of close thinking.

A clyster may be defined the introduction of a fluid into the rectum to lubricate, distend, and thus excite contraction to unload the gut; the fæces moving back, and the whole intestinal canal sympathising with the rectum, an enema is more extended in its operation than is mostly suspected.

The limited means at our command to evacuate the stomach and intestines of the horse, our scanty list of cathartic medicines, and the length of time the best take to operate, render clysters indispensable at the onset of almost every acute disease. Unlike us, the practitioner in human medicine may choose from a long list of purgatives, and in an hour or two obtain results, with little disturbance to his patient, such as we cannot realise even in twelve hours, by the administration of any known medicine; hence the more frequently and urgently do we require simple warm water clysters in horses.

I strongly condemn back-raking or emptying the gut by the hand. Such practice is never needed to remove the fæces, unless no apparatus or means to give an injection be obtainable, when the hand may be a temporary though poor substitute for a clyster. It was not without back-raking for some time, seeing that it was at best a useless procedure, not always innocent, and never scientific, that I discarded it as a rule. Physical exploration of the rectum as a means of diagnosis is a very different thing, and a rare requirement; never do we wish to recur to it to ascertain whether the rectum be full, inasmuch as, if an injection be given, while the operator might be pulling off his coat and oiling his arm, the contents of the bowel would most likely be expelled.

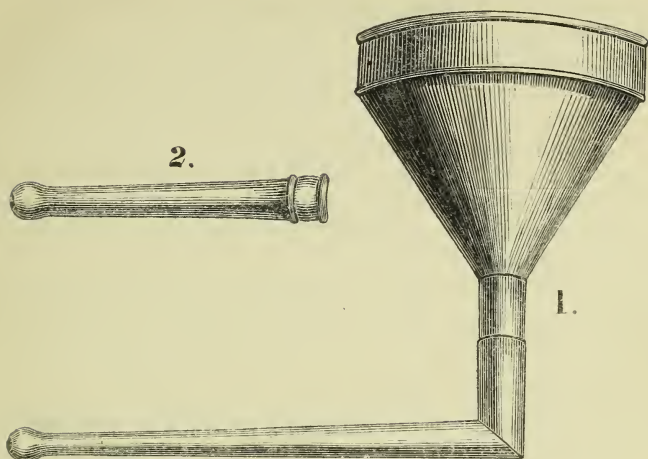
The quantity of fluid which I inject at each time does not exceed two or three pints. Large quantities of fluid passed up, and the enemata too frequently repeated, often give rise to much inconvenience. The first clyster, consisting of three pints of warm water, and a little olive or other bland oil, will be retained from three to eight minutes, when it will be expelled with most or all the fæces the rectum contains. In all urgent cases, I repeat the injections two or three times at intervals of about a quarter of an hour; after that, the intestine being relieved, the favourable influence on the nervous system secured, and other treatment having been duly regarded, the clysters will be advantageously repeated at intervals of an hour, and after a time, even once in two hours. My rule is to favour the expulsion of fæces as often

as by the peristaltic action they are passed back into the rectum.

A few words in explanation of the restriction as to quantity, frequency, and even too long continuance of clysters without intermission. I have seen harm done by excess, and the most soothing therapeutic we possess thus becomes an irritant. I have seen the anus swollen in consequence, and after each effort to evacuate, the rectum inverted, bearing signs of extreme irritation: hence I have long since given up the use of salt, soap, or other stimulating agent, as the water and a little oil excites quite enough. When the use of injections is protracted for two or three days, a decoction of mallows or linseed may be used at intervals, often with good effect; under other circumstances, decoctions of poppy heads or chamomile flowers are beneficial. After the first three or four injections, but little oil need be employed, merely enough to lubricate, and favour the introduction of the tube.

The instruments in general use for giving injections to horses are susceptible of improvement. The ordinary pewter barrel syringe has been generally used by me at home, but as cases in which clysters are urgently required are often those to which we are called at some distance, the large syringe, from its inconvenient form, is seldom carried about. To supply its place, we have used a boxwood tube with a bullock's bladder; a gutta percha bag has of late been substituted for the latter. An objection to the wooden tubes in use is, that they are not large enough in the bore, and they are apt soon to split from alternate exposure to wet and dry. To obviate these inconveniences, I have suggested a metallic tube of copper, tinned, combining lightness with strength. Its shape is indicated at fig. 2; it is to be ten inches long, the wooden pipe being twelve, and the bore is to be half an inch in diameter at the smallest end, and one inch at the largest. Whether used with a bladder or gutta percha bag, this tube will be found an improvement on the wooden one, as more portable, more durable, and more effective in use.

I have in the next place to introduce an instrument most important for its simplicity and complete efficiency; it fell into my hands four years ago. At fig. 1, it will be observed that it consists of a straight metallic tube (the one I use is of tin), with a second tube adjusted perpendicularly at one extremity, and supporting in its turn a broad funnel, into which the fluid is poured in giving the injection.



The horizontal tube is twelve inches long, tapering from one extremity, where its bore is one inch, to the other orifice, half an inch in diameter; the perpendicular tube is four inches long, with inch-bore throughout, and at the top is a funnel, six inches deep, and seven and a half inches in diameter above, which holds three pints of water up to the lower rim, that is to say, within an inch of being full.

The history of this wisely-conceived instrument is unknown to me, beyond that I first used it in the town of Spezzia, in the Sardinian kingdom. Taking some horses, that I had purchased in England, to Florence, and being detained at the town of Spezzia, by a young horse affected with strangles, complicated with pleurisy, I sent from my inn to borrow an injecting syringe of the veterinary surgeon or farrier. The messenger returned, saying the little town afforded no better than the instrument above described, and which at once favorably impressed me, as experience had long since taught me, that no mechanical force was necessary in introducing fluid into the rectum, beyond that required simply to empty the syringe or bladder, or other such receptacle.

The tube having been dipped in oil, it was introduced into the anus; there supported by the left hand, and balanced by the right, whilst an assistant poured from a jug into the funnel, a mixture of warm water and oil. It flowed into the rectum, by gravitation, in an uninterrupted stream, till the pent-up gas, in attempting to escape from the intestine, checked the entrance of fluid, but as several large bubbles of air passed through the water in the funnel the whole of the water passed on. After repeated trials, I had a similar instrument

made from the original; and subsequent constant use has confirmed my first approval.

This instrument, in all its simplicity and efficiency, calls for some comment. It proves, experimentally, that placed horizontally, as the horse is, none of the pumping-force, so often used, is necessary in giving clysters. I had long since convinced myself of this; indeed, I may congratulate myself that I never caught the mechanical error. It is most important to notice the escape of flatus in giving the injection with this funnel. Why is it that so soon as a clyster is given with an ordinary syringe it is evacuated? Simply because, what with gas and fluid, the gut is too much distended, and is stimulated to contraction. Any one who has given injections in the ordinary way, has felt an opposing expulsive effort used by the animal, and the whole or part of the injection is expelled before laying long enough to produce the good effects of which it is capable.

I conclude these remarks by enforcing—1st. That in using clysters, a moderate amount, say from two to three pints of fluid, should be injected at each time.

2dly. Enemata should not be too often repeated; and, if long continued, some soothing agent is to be employed, or a certain prolonged intermission enjoined.

3dly. Any contrivance, like the funnel-shaped instrument above described, allowing the escape of flatus, precluding the exercise of mechanical force in the administration of the injection, is to be preferred to more complex apparatuses.

4thly. Let the instrument used be whatever it may, great care should be taken not to use it roughly, and no irritating substances, as a rule, should be added to the water injected.

I trust, on another occasion, to set forth, by the direct citation of important cases, the worth and universal application of clysters in veterinary practice. For the convenience of those gentlemen who may wish to try the instrument above described, I may add that Mr. Brennand (late Long), veterinary instrument maker, in Holborn, has availed himself of mine, and my suggestions, to make others from, and thinks of introducing some improvements; but it should be borne in mind, that whenever a thing is newly introduced, it should be fairly tried and studied without modifications, which, if instituted without foresight and experience, are apt to get a most useful thing into disrepute, to the detriment of those it might have been useful to. With the funnel, however, the thing is so simple, that it is difficult to be spoilt.

A FATAL CASE OF LAMINITIS CAUSED BY THE ANIMAL'S VIOLENTLY KICKING AGAINST A WALL IN THE STABLE.

By W. T. STANLEY, M.R.C.V.S., Leamington.

THE patient was a very valuable grey mare, the property of a gentleman in this town, which I was requested to attend in great haste, in the summer of 1854. On my arrival, I found her in excessive pain; profuse perspiration covered the body, the pulse beating as quick as it could, and the respiration sympathising with the pulse. She stood in a fixed position, and was unable to move. I learnt, upon inquiry, that she was left well on the previous night, and had eaten all her food, but that during the night she had kicked so violently as to break a fourteen-inch wall completely through. I soon perceived that the laminæ of the hind feet had received very serious injury. As she bore scarcely any weight on the feet, it was impossible to get her shoes off; I consequently had her cast. After bleeding her, and giving some aperient medicine, I left her. The subsequent treatment consisted of a repetition of the bloodletting, both local and constitutional, with the constant use of fomentations, night and day, still with no abatement whatever of the pain; indeed, so rapid was the progress of the disease, and so acute the sufferings of the animal, that I was obliged to have her destroyed on the third day. Both hoofs had nearly sloughed off, from mortification of the laminæ. The fibrous tissue appeared to me to have been ruptured, from the kicking; and an effusion of blood showed itself at the coronary attachment the morning following the injury. I therefore from the first anticipated an unfavorable termination of the case, and gave my opinion in accordance.

CASE OF CHOKING MISTAKEN FOR INFLUENZA.

By the Same.

I WAS requested to attend a valuable hunter, the property of a sporting gentleman, living some miles distant from this town, and which, I was informed by the groom, was seriously ill, and had been so for two days. Further, that the throat

had been blistered, a fever-ball given, and blood withdrawn to the amount of four quarts; nevertheless, the symptoms became more urgent, as evidenced by the difficulty of respiration. On my arrival, I found the patient in a very precarious state; the pulse wiry and very quick, beating from 90 to 100 in a minute, and the other symptoms as above stated; only that I observed a glairy muco-purulent discharge issued from both nostrils. There was also present great emaciation, coldness of the extremities, and frothy mucus flowed from the mouth, but this was unaccompanied with any fetor. On inquiring into the origin of this attack, the only information I could glean was, that he was attacked suddenly with symptoms of sore throat, which gradually became worse.

At first sight, judging only from the respiration at the flanks, I thought it was a case of acute laryngitis, and that tracheotomy must be at once performed; but, on further examination, I could not satisfy myself that the symptoms really indicated inflammation of the lining membrane of the air-passages. On closer inquiry, I ascertained the horse was a ravenous feeder; and after watching the symptoms more minutely, for some time, I at last detected a retching spasmodic action of the muscles, which satisfied me that the animal was choked. This opinion I communicated to the owner, who was quite certain that it was not the case; the horse having, as he said, swallowed the fever-ball the day previous. Having sent for my probang, after a little trouble I succeeded in passing it into the stomach; and in doing so, dislodged an accumulation of unmasticated oats, chaff, and beans, which had become firmly impacted in the chest portion of the œsophagus. The horse, immediately after the withdrawal of the probang, was much relieved. I then applied a blister, from the throat to the sternum, gave diffusible stimulants, applied friction, with bandages to the legs, and with good nursing, in a week, the horse was quite recovered, and soon regained his condition.

CASE OF RUPTURED SPLEEN.

By W. C. SIBBALD, M.R.C.V.S., Biggleswade.

THE subject of the following case was the thorough-bred, brown mare, "Seaweed," by "Slane" out of "Seakale" by

"Camel." She was the property of the Hon. George Ongley. For some years she was kept as a brood mare, and had produced eight foals. The horse had access to her this season, but she was supposed to be barren.

On the night of the 3d of November, a sack, containing about a bushel of wheat, was incautiously left within her reach, when she contrived to throw the wheat about the floor of her box, and it was thought that she had eaten some portion of it, but not much.

On the morning of the 4th, she was found dull, and disinclined to feed,—a very unusual occurrence, as she was a ravenous feeder, although always lean. Towards evening, symptoms of indigestion having manifested themselves, a pint of castor oil was administered to her, and she was allowed to drink about two quarts of gruel. After this, the pain increased in intensity, accompanied with great distension of the abdomen, until she became perfectly cutrageous, and was violently convulsed. In this state she continued the greater part of the night; but towards morning, after the use of long-continued friction to the belly, and an abundant escape of gas per anum, she evacuated a considerable quantity of fæces, and the pain gradually subsided.

I was requested to visit her on the 5th, and on my arrival, about 10 a.m., I found her standing quiet, pulse very indistinct at the jaw, and not to be counted, yet the action of the heart strong, and beating 96 per minute. Mouth dry, sour, and fetid. The conjunctival and Schneiderian membranes of a damask hue; the surface of the body, and the extremities comfortably warm; the abdomen but little distended, and she had frequently passed rather soft faecal matter, in which there were a very few grains of wheat. While standing by, she evacuated a considerable quantity of urine. A ball, containing five drachms of aloes, was administered, and enemata of warm water directed to be thrown up occasionally. No food was to be offered, and not more than two quarts of gruel allowed her during the day.

8 p.m.—The mare has not had any return of the pain. A small quantity of dung has been brought away by the injections, which contained here and there a grain of wheat. The pulse is 72, and now perfectly distinct at the jaw: the heart does not beat so forcibly, and her mouth is moister, and less offensive. The left hind leg, and hock, have become considerably swollen, the skin very hot, and she is quite lame. Continue the use of the injections, and allow two quarts more gruel at night, and the same quantity in the morning, withholding all dry food.

Nov. 6th, 11 a.m.—The mare remains tranquil, and seems comfortable. Pulse 66; mouth moist, and sweet; body and extremities warm; the membrane of the nose, and the eyelid, is of a natural colour: all the four legs are now much swollen, altho' the lameness has disappeared from the hind limb. On the animal being led out, she passed some very soft fæces, in fact, purging was commencing. Allowed her a small quantity of warm water, and a warm bran mash, as diet.

7th, 1 p.m. —She has not had any return of pain; eats as much mash as is allowed her, and is very thirsty; pulse 76; purging freely, abdomen flaccid; mouth rather dry; body and extremities warm. Scarcely any wheat now passes with the dejections. Allowed her a little hay, in addition to the bran mash, and substituted gruel for water.

8th, 12 noon.—The mare was again attacked with severe pain early this morning, and it has since been increasing in intensity. She fed well during the night, and purged considerably. A draught, containing Tinct. Opii, et Sp. Æther. Nit. has been administered to her. She can now scarcely be kept upon her legs. The submaxillary pulse is very indistinctly to be felt, beating 100 in the minute; ears, legs, and mouth cold; the œdematous swelling has completely disappeared from the limbs; the abdomen is exceedingly flaccid; she empties the bladder freely; her breathing is somewhat stertorous, and when she rises for a minute or two, she moves very unsteadily; the visible mucous membranes are again of a damask hue. She was caused to stand while about three quarts of blood were slowly withdrawn from the right jugular vein, after which she broke out in a cold perspiration. A strong liquid blister was then applied over the whole external surface of the abdomen, and she continued in great pain, being constantly up and down, until 3 p.m. At that time the pulse could not be felt at the jaw; her ears were quite cold; occasionally she was violently convulsed, the muscles of the whole frame quivering, and the legs stretched rigidly out. The eye-balls seemed ready to start from their sockets, and her breathing became exceedingly heavy and stertorous. About four o'clock, in one of these paroxysms, she expired.

On opening the body about an hour after death, the cavity of the abdomen was found filled with blood. The peritoneum, and subjacent cellular tissue, infiltrated by exosmosis, and of a dark red hue. The hemorrhage had taken place from a rupture of the peritoneal covering of the spleen, on its concave side, and in immediate contiguity to the attachment of the

mesentery. Some portion of blood had passed between the layers of the membrane, and diffused itself throughout, giving the whole of it a dark red colour. The spleen itself was enlarged, and in its substance were several collections of effused blood. The stomach contained a small quantity of fluid. The small intestines were nearly empty, and contracted; but the larger ones contained a good portion of semi-fluid fæces, and the fæces in the rectum were consolidated. The appearance of all these latter viscera was perfectly healthy, and but a very few grains of wheat were met with. No other morbid appearances were present, and the uterus was empty.

In the Spring of 1848, this mare had a severe attack of influenza, with the formation of large abscesses in the region of the parotids; when the danger of suffocation appeared so imminent to the attendant veterinary surgeon, that he at once performed tracheotomy, and, on attempting to open the abscess, he accidentally wounded the superior branch of the left jugular vein. From this considerable hemorrhage took place, and subsequently the main trunk of the vein became obliterated. This could have had nothing to do with the diseased state of the spleen; but the mare never recovered her *embonpoint* after this attack.

It appears to me that the undue amount of pressure exercised by the distended stomach upon the diseased spleen was the immediate cause of all the mischief. I do not remember having seen an animal so painfully convulsed, and in this state she was the whole of the Sunday night, I am informed.

[Mr. Sibbald kindly forwarded to us the diseased and ruptured spleen; but he has so correctly described its appearance that we do not feel called upon to add any thing to it.]

CASE OF INFLAMMATORY ŒDEMA.

By R. HUDSON, M.R.C.V.S., East Retford.

My patient was a large, strong, wide-chested, three-parts bred blood mare, colour dark grey, the property of Mr. Peck, of Hayton. Late in the evening of the 30th October last, my immediate attendance was requested, and on looking the animal over and making a few inquiries of the owner, a respectable farmer, he informed me that she was first noticed

to be amiss on the Sunday morning previous, and was then taken up from some low-land grass, together with her sucking foal. The tongue and mouth were then much swollen and inflamed, with great difficulty in eating and swallowing. This latter had in a great measure subsided by the Tuesday night, but the swelling passed down and became fixed along the whole length of the neck, burying the jugulars on both sides, except close up to the bifurcation of the vessel on the off side. There we managed to detract blood, after a little pressure, which caused it to pit at that part and buried the vein more. All around the breast, lower parts of the shoulders, elbows, and upper arms, the tumefaction extended to a frightful extent; the animal appearing just like a slaughtered calf, blown up by the butcher, previous to taking off the hide. The mare was immoveably fixed, and the owner expected she would drop dead before morning; but I entertained a different opinion, as the extremities were warm and no sinking pulse. It was something over 90, full and bounding; the respiration materially increased; a good deal of anxiety expressed in the countenance, and futile attempts to move were made; the knees faltered; her nose was poked straight out; inability to move the head laterally, or only in a very slight degree; fæces matted together with a quantity of viscid mucus, but relaxed rather than otherwise; the swollen parts hot and painful to the touch, except near the head, where it pitted a little on pressure. I bled until the pulse faltered, with other indications of having withdrawn blood enough; the amount was seven or eight quarts. I then gave a laxative combined with a diuretic; inserted a long seton at the breast, and a rowel in the intermaxillary space; had a rug made with arm holes to fit all around the breast, shoulders, and lower part of the neck, and hot wrung-out flannels applied continuously through the night.

October 31st.—8 a.m. I found my patient standing firmer on her legs; pulse 86, softer and less in calibre; respiration much as before; she has eaten a mash, and taken a few gulps of water. She is evidently easier, although little or no perceptible impression is made on the swelling. I punctured the breast and upper arms in about twenty places. From some of the punctures, pure blood escaped; from others a fluid resembling serum. Gave a diuretic; stimulated the upper part of the neck, and directed the fomentation to be left off at bed time if the animal went on well. The Lini-mentum Saponis was applied to all parts affected; a hot dry rug or blanket placed inside the other, which had become wet.

November 1st.—The swelling has materially decreased. A good discharge takes place from some of the punctures; seton moist; pulse 64; purging rather more freely; fæces free from mucus, and more natural. Three detached or isolated spots of swelling about the size of eggs, have appeared on the neck, on the near side, which are rather hot and sore.

2d.—9 a.m. Repeated the diuretic. The fresh swelling has increased, and is working its way up to the mane, and back again to the head and poll on both sides, being very hot and painful; some difficulty in swallowing; pulse 68, and rather full; countenance very anxious; respiration quicker than at any time before, and the heart, which has hitherto been very quiet, throbbing a little. Now my worst fears began to gather about me. I was apprehensive that the second attack about the head and throat would wear my patient out, although of a sort to all appearance as hard as iron. The seton discharges well. About the breast the swelling is much reduced, and is settling down the fore legs, which are of an immense size. She is now able to move for the first time; the pain experienced by the parts being rubbed with the *Linim. Tereb.* caused her to do so, but she cannot be got round to the manger. I applied a blister around the throat, and up to the ears; had a hood made to fit the head and neck, and ordered fomentations to both sides of the neck until I returned.

7 p.m.—The swelling has somewhat lessened. I punctured the arms, they were so much distended, and commenced giving the following powders, as balls we could not well get down.

℞ Hyd. Chlor., ʒj;
Pulv. Opii, ʒjss;
Ant. Pot. Tart., ʒij.
M. et divid. in pulv. viij.

One to be given every six hours in mash; I also ordered the following ointment:

℞ Ung. Iodini Co.,
Ung. Hyd. Fort., āā ʒiv;
Camphoræ, ʒj. Misce.

The greater part of this was rubbed well in at once on both sides of the neck up to the mane and poll, and the hood put on again.

3d.—The swelling is much reduced. She eats the powders in a mash; has moved into another part of the stable

and back up to her manger; pulse 60, and respiration quieter.

4th.—I did not see her. They wean the foal.

5th.—All is going on well, except being rather unsettled at the loss of her foal. A swelling is now perceived to exist on the near side, about the middle of the ribs, at the part a saddle would cover, and about the size of a large saddle-flap in extent. Renew the seton, and remove the rugs for good. Clip the hair off over the swelling, and apply the iodine ointment.

6th.—All the swellings disappearing; pulse about 45.

The ointment has had a decided and permanent effect, and I seem to regret that it was not applied earlier. The appetite has returned.

And now a word as to the causes, nature of the disease, and loss of time before any remedies were resorted to. When we cannot find any other reasonable cause, of course, there is cold, as usual, to fall back upon. Can this unusual case be attributed to anything else? As to its nature, the only explanation I have been able to give is that it was an attack of inflammatory œdema, which, however, does not at all satisfy the inquisitives. As to the neglect, the owner was advised by a neighbouring farmer that as it was a distemper the same as all his had gone through, the best plan was to let the poor suffering brute alone. This is the dignified humanity of the nineteenth century! You may preach as long as you like about educating Veterinary Surgeons, 'tis all, I fear, fruitless. Still, despair not. In addition, one of the Old School saw the mare out on the Monday, and he said that he had seen nothing like it before, and I suppose felt no inclination "to buckle his whole armour on;" so she was left by him, like many more, to die, or to recover by Nature's aid alone.

ON THE PRINCIPLES OF HOMŒOPATHY.

By E. MAYHEW, M.R.C.V.S., London.

GENTLEMEN,—Some time having elapsed since two practitioners contested in the pages of your Journal concerning the value of homœopathy, perhaps an individual, personally unknown to both parties, may be now permitted to offer the few facts which in the course of practice have come to his knowledge regarding the matter in dispute. I trust this

may be done without rousing the angry feelings on either side, for surely sufficient time has been allowed for excitement to cool down.

In the first place, I know nothing of infinitesimal doses, or of the sniffings, about which the originator of the system spoke so confidently. I believe, moreover, that the living followers of the doctrine have discarded the last, and are somewhat divided concerning the first. But, as regards the essential principle of the practice, or that "*Like cures Like*," I can bear something approaching to direct testimony. I was led into the means of doing this by the lamentable want in recognised medicine of anything resembling a theory. I found when in difficulty—when I most needed help—there was nothing better, or sounder, than conjecture, to be obtained from the various works on practice. I turned to books on human medicine, and found the same want to prevail even to a greater extent than in our own. I read that, in extreme cases, I might do so and so; or I might do exactly the reverse; that Mr. So-and-so had done such a thing with the very best effects; but that Mr. Such-a-one had tried this last method without any result. In fact I read and read only to grow confused. I became worse than helpless. The little confidence I once had was entirely destroyed by the various measures suggested, or the different practices sanctioned. I longed for something decisive which in my perplexity I could fall back upon.

Now, homœopathy does possess a theory. It may not yet stand every test, but we must in fairness make some allowance for the ignorance of those who apply it. Hereafter, when the animosity created by opposite interests shall have tamed down, probably the theory of the homœopathist may be more candidly investigated, and more temperately judged. At present, however, this class of medical practitioners have effected something. It was by them, and by them only, that aconite and arnica were forced upon the recognition of the regular practitioner. I could readily quote other instances, but I must confine myself to facts, with which intention I originally commenced this paper.

Everybody remembers when the news reached us from America of the wonderful effects of ether. I, like many of our profession, began to experiment with it upon dogs. It makes these animals emit strange cries, have convulsive movements, pass their fæces and urine involuntarily, and ultimately to lie quite motionless. All accustomed to dogs, must in the above description recognise the likeness to the ordinary fit. The similarity at once occurred to me. I had

been much annoyed by this disease. I had exhausted all the medicines recommended for these affections, but each had only ended in my disappointment. I resolved in my distress to give the homœopathic theory a trial. As the creature could not swallow when in a state of insensibility, and as ether was peculiarly volatile, I determined to test its virtues when given by injection. I dissolved some in water, and soon had an opportunity of trying its effect. On the first trial it cut the fit short as with a knife.

Shortly after this, a dog was brought to me suffering from internal hemorrhage. I employed acetate of lead, and the known remedies, without benefit. The animal died. I was subsequently sent for to prescribe for a dog labouring under an attack of hæmaturia. I went home having promised to send some medicine, though at the time I knew not of what it was to consist. I consulted books to no advantage. In the midst of what are termed authorities, I was in want of a director. In my difficulty I fell back upon the homœopathic theory. I dropped a little tincture of cantharides into a two-ounce vial, filled the bottle up with water, and having labelled it, sent it to the proprietor.

The next day I called again to see my patient, with no very bright hopes as to the advantage derived from my medicine. I knew how tedious cases of this nature usually prove, and had little confidence in the new agent I had employed. To my surprise I met smiling faces. The third dose had changed the colour of the urine. The animal, as I then saw, was lively, having recovered its spirits; nor have I since been requested to attend upon the same dog.

I was mentioning this case to Mr. George Austin, V.S., of Pimlico, when he asked me if I had ever used cantharides in œstrum upon the mare? Its effects, he informed me, were almost magical. I knew how anxious many horse-owners were to check this annoyance in the spring, and it was not long before I had an opportunity of putting Mr. Austin's assertion to the proof. A gentleman living near me had a fine grey mare, and he applied to me to stay the annoyance which rendered her alike offensive and unsafe. I mixed one ounce of the tincture of cantharides with twelve ounces of water, and directed a wine-glassful to be given thrice daily. Having sent the medicine I took no further notice; but a few days afterwards met the proprietor driving the animal. I purposely hailed him, being anxious to learn the action of this, to me, novel application of cantharides. His replies were short, but perfectly conclusive. The "physic" had done all he could wish, and if it would keep there was left

sufficient for another occasion. This answer induced me to try the agent in other instances of the same kind. It has never failed me, but always quieted the system without affecting the constitution.

I now come to the period when the homœopathic theory did me material service. I mean when it instructed me in the remedies necessary to cure distemper. Repeated dissections had shown me that the disease was inflammation of a subacute kind affecting the intestinal track. Books on the human subject informed me that this condition of bowel constituted continued fever in man. These facts suggested the employment of quinine; but that agent did not do all I desired. Some benefit was accomplished: still the cure was tedious, and too frequently left behind it consequences more stubborn than the original disease.

Once more I turned to the homœopathic theory, and found mild doses of arsenic suggested in bowel affections. I tried this, and the result was such that I still employ it.

These are but a few, a very few, of the proofs I have experienced, that, let there be what folly there may mixed up with the first announcement of homœopathy, that doctrine is nevertheless based on a solid foundation. Very probably all declarations contain some truth, since even falsehood is a mixture. That which is entirely without foundation only excites a sneer. Thus, if a man were to assert he had bitten a piece out of the moon, who would tax such a being with uttering a lie? But, if a man taxed another with a theft of which the individual accused was innocent, then because of the truth involved in the possibility of the theft having been so committed, a gross and malicious falsehood is uttered. Thus I contend there is some truth in homœopathy. It cannot surely be worse than a lie. All it asserts may not be correct, but as the most flagrant falsehood requires a portion of truth to give it currency, so I maintain homœopathy is not entirely ridiculous; it is not even quite groundless. Many of its declarations have been tested, and found to bear the hardest ordeal. That we generally give too large doses is by many concluded. That the homœopathists may give too minute doses is also probable. Nevertheless, the dose is not a part of the homœopathic theory. It may be the custom with most homœopathic practitioners to give very extreme dilutions, but this is not insisted upon by their motto of "Like cures like," which I have proved to be efficacious when what we consider to be minute quantities are administered.

Hoping I have written nothing to excite the anger of either of the former disputants, such not being my object or

desire ; my sole intention being to bear evidence concerning a matter of some importance to the body of your readers ; I have the honour to be

Your very humble servant.

7, LONDON STREET, NORFOLK SQUARE.

OBSCURE ABDOMINAL DISEASE IN HORSES, INVOLVING THE RESPIRATORY ORGANS.

By B. CARTLEDGE, M.R.C.V.S., Sheffield.

GENTLEMEN,—I hope the following, though brief, and I fear not very explanatory history of a disease which is now prevailing amongst the horses of a firm in this town, may not be unacceptable to your readers.

There are some peculiarities hitherto unobserved by me in the symptoms of other, but somewhat similar, affections : and I regret that from the commencement I did not chronicle the daily changes which occurred, and the treatment I thought necessary to pursue. My excuse, however, must be, that I could not, from the early appearances, foresee what was to follow ; nor could I anticipate that the stable would furnish so many cases of interest.

I am, Gentlemen,

Yours very faithfully.

On the 10th of October my attendance was requested on a brown horse which was then being attended by a practitioner in this town, and whom I met in consultation. The account given of him was, that a few days previous he had lost all desire for food ; to which succeeded a cough, and some abdominal pain apparently.

These symptoms were present on my first seeing him, and in addition, I observed that the visible mucous membranes were heightened in colour ; the coat stared ; the pulse numbered about 58 beats in the minute, but the breathing was tranquil. In reply to inquiries, I elicited from the man who attended him, that the pain showed itself only at intervals, and that at times the paroxysms were severe.

The fæces were voided with regularity, and their character was that of a horse in health ; although, from the fact of the animal having eaten so little food, they were necessarily lessened in quantity.

The treatment, as I learnt, had hitherto chiefly consisted in the administration of "fever-balls," and as I only prescribed for him once, I may not be considered responsible for what followed. I was obliged to leave home a few hours after my seeing him, and my absence extended over several days. My assistant, Mr. Lamb, continued to meet the practitioner twice a day, but I am sorry to say that their united efforts were unavailing to effect a cure, as their patient died on the 12th, at 3 p.m.

A post-mortem examination was made, and Mr. Lamb informs me that the right lung was partially consolidated, and the peritoneal covering of the bowels generally inflamed, as also was the lining membrane of the bladder; further that the whole of the viscera were somewhat unhealthy in their appearance. He was, nevertheless, at a loss to know (in the absence of any very severe symptoms during life, and the non-appearance of very active disease in his *post-mortem* investigation) what was the real cause of death.

On the 4th of November, I was again summoned to see another brown cart-horse which had become unwell.

The symptoms in him were those of a general febrile character, but nothing urgent attracted my attention. He was performing his usual work the day before, and his refusal of his night feed was the first indication given of ill-health.

I prescribed the following draught to be given immediately:

R Sol. Aloë Bbd., fʒiv;
 Liq. Ammon. Acet. conc., fʒj.
 Sp. Æth. Nitrici, fʒij. Misce.

On the following day, my patient was somewhat nauseated with the medicine, but he had eaten a little bran-mash with oats, and, to use the man's expression, had "foundered amongst the hay." His pulse was scarcely so full as I found it on my first visit, and it numbered 54 in the minute. I was informed that he had coughed once or twice, and on that account, some of the Ol. Mylabris Cichorii was directed to be applied to the throat. I also ordered a vegetable tonic to be given.

I had no reason to apprehend any danger, nor did I think otherwise than that my patient would do well. It is scarcely necessary for me to enumerate the daily changes which occurred. It will be sufficient for me to state that so rapidly did the animal become worse, that I at one time entertained no hopes of his recovery. During his attack he frequently evinced abdominal pain, but the action of the bowels was tolerably

regular, and the breathing all this time remained *undisturbed*, although the pulse reached as high as 96 in the minute, and the circulation remained thus excited for four or five days, in spite of the use of Tinct. Aconit., Digitalis, Opium, Ext. Belladonna, and Antim. Pot. Tart. The cough became more frequent, and the visible mucous membranes fully participated in the general inflammation, while the debility which followed was extreme. Once I ventured to have him turned in the stall, which, but for the assistance of half a dozen men, would have ended in his falling, and as I feared, never to rise again. Vesicants were thrice applied to the sides, and they were repeated over the throat and trachea also. Shortly after this the tide turned in our favour. The pulse returned to its natural tone and number, and the animal is now regaining his lost condition.

At this juncture another, a very fine cart horse, and in the same stable, showed premonitory symptoms of the same disease. He, like all the rest belonging to the company, was in excellent condition, and this was the first sign of sickness he had exhibited during the whole period he had been in their possession. My previous knowledge of the other cases taught me that "delay was dangerous," so that in this instance I lost no time in the application of a blister to his throat and sides, and I adopted the like treatment to that already described. Twenty-four hours elapsed, and the blister had taken no effect: my directions were then for it to be repeated, and that it should receive additional strength by the union with the Ol. Mylabris of a third part of the Terebinthinate Solution of Croton. This was applied again in twelve hours afterwards, but without producing even tenderness of the parts, and a similar period was only allowed to expire before the vesicant was employed for the fourth time. The symptoms did not vary much from the onset up to this period of the history. His exhaustion was not less than that shown by my other (and now convalescent) patient; for if compelled to move across his stall, the motion was accompanied by symptoms of paralysis of the hind parts, and it was with difficulty he retained the standing position. The pulse ranged between 80 and 95, and the conjunctival membrane was considerably injected; but the respirations were neither hurried nor laborious. The same abdominal pain presented itself, and excepting that he ate a few chopped carrots mingled with about half a pint of oats, twice repeated during the day, he took no support.

To my list of patients was added a chesnut horse, on the 26th, and on the 28th, I received the further addition of

a brown horse and a black mare. They very shortly reached the same stage of "debility," while the second brown horse remained in a most critical condition. My four patients, now in turns, excited my fears, and I scarcely knew which to consider the least dangerous. In none of them, however, was the breathing in any way excited. I directed that the dung should be removed at once after it had been voided, that the channelling should be frequently washed, the bedding often changed, and that the strictest cleanliness should be observed. Besides this, Mr. Lamb fumigated the stable, by the addition of sulphuric acid to a paste made of M'Dougall's disinfecting powder, several times a day, and the dry powder was sprinkled over the floor, and underneath the straw. This proved very effective in removing all disagreeable smell; and by these means the stable was kept as free from odours as could be desired. The pain attacked three out of four animals, and it was no uncommon occurrence to have them all down together, each apparently suffering from spasms of the bowels; and these paroxysms always came on towards 7 P.M. I relieved them by opium, combined with very small doses of calomel; and the cessation of these periodical pains was the first sign of amendment. The black mare, however, continued to be the subject of these attacks, and she died on the 6th of the present month. The post-mortem appearances were not dissimilar to those communicated by Mr. Lamb, in the other case. There was consolidation of the right lung, the bowels, and mucous lining membrane of the bladder were generally inflamed, and the heart, which was pale, but firm in its structure, had on its base a number of ecchymose spots.

I am happy to be able to say that my remaining patients, a chesnut, and two brown horses, are making rapid strides towards recovery. Tonics are now being administered to each, and debility is all I have to contend with.

Perhaps it may not be out of place here, to recommend to those of the profession who have not yet made use of it, M'Dougall's disinfecting powder. I have had, during the past few months, many opportunities of testing the valuable properties assigned to it by the patentees, and I have every reason to speak of it in high terms of praise. As a deodorizer, and antiputrescent, I know of nothing equal to it; and for the hospital stable it is invaluable.

Being, too, a fine, dry powder, it is of easy application. It may be sprinkled over the floor of the stable as it is, or mixed with water and thrown in those parts where the excreted matters accumulate. Perhaps the most effectual

method is fumigation. This is done by making the powder into a paste, with water, and adding to it sulphuric acid. The gases evolved act as a powerful disinfectant.

[We, also, can bear testimony to the efficacy of Mr. M'Dougall's powder. It is both a deodorizer and a disinfectant. At once it checks the decomposition, and removes the smell of putrefying organic matters; and that far more effectually than does peat-bog charcoal. Moreover, it has an advantage over this substance, namely, it does not simply absorb the fetid odours, but it decomposes them by the disengagement of sulphurous acid. We kept urine, by means of it, in the summer, for nearly two months, without its becoming at all offensive; and the amount of phosphate of ammonia and magnesia thrown down from it was great; hence we should think it would prove highly beneficial when mixed with the drainage of stables, cow-houses, &c., in furnishing a valuable manure for the agriculturist; also for public urinals.]

TWO CASES OF RUPTURE OF THE DIAPHRAGM FOLLOWING ACUTE ABDOMINAL ATTACKS.

By J. CARLESS, Jun., M.R.C.V.S., Tamworth.

IN the early part of March last, I was called in to see, and professionally treat, a horse, suffering from abdominal pain; and as the case proved to be one of an uncommon and fatal character, I will endeavour to give you an outline of its history. I do not know that I should have troubled you with the particulars of this case had it not been connected with a very strange and remarkable coincidence.

The horse in question was the property of Mr. Jennings, of this town, a wholesale druggist and grocer, and his illness commenced in the following manner. After resting for a few days, he was put to a cart for the purpose of fetching a load of coals from a colliery, distant about two miles from his home. I must here remark that the roads at that time were very slippery and awkward from the effects of a long-continued frost. The animal performed his task with comparative ease, but in a short time afterwards he was observed to manifest symptoms of griping pains, which occurred in paroxysms, and at first appeared of a slight and subacute nature. The groom, imagining that he was in pain from a retention of

urine, gave him a diuretic ball that he procured from an adjacent shop; but in consequence of his pains increasing in frequency and acuteness, I was requested to see him in the evening, at which time I found him lying in a comfortable position, with a cheerful countenance, pulse of a normal standard, respiration undisturbed, and the temperature of his body and extremities perfectly natural; a train of symptoms that impressed my mind with the conviction that he was labouring under some slight functional derangement of the digestive organs. I gave him an anodyne draught consisting of—

Spt. Æther. Nitric., ʒij;
Tinct. Opii ver., ʒj.

and an aperient ball, containing five drachms of aloes, &c., and promised to see him again after the lapse of two or three hours. When I returned, he was standing up, to all appearance free from pain, and seemed inclined to eat; consequently I ordered him a bran mash, and tepid water *ad libitum*, with a good bed in a loose box, and felt no hesitation in leaving him till the morrow. At the dawn of the morning, I was summoned to see him again, his sufferings having increased to an intense and alarming extent, evinced by quick breathing, and a greatly accelerated pulse, a tympanitic state of the abdomen, a cold and clammy sweat bedewing his body, and an amount of struggling attending each paroxysm that rendered him dangerous to approach, and dreadful to look at. He had urinated once or twice during the night, but had not voided a particle of dung from the commencement of the attack. I now bled him, applied some blistering ointment to the inferior part of his abdomen, gave him—

Ol. Lini, ʒxiv, et Ol. Tereb., ʒijj, in haustus.

I examined him per rectum, and found the gut, as far as I could reach, quite empty. I need not say that I looked upon the case at this juncture as being in great and imminent danger, and prepared the owner for a fatal termination; believing, as I then did, that some serious lesion of the abdominal viscera had taken place. In the afternoon, when dissolution was close at hand, we had him destroyed, as his appearance was truly distressing; his rectum having been forced out to an enormous extent by the violence of his struggling.

I found, on making a post mortem examination of him, that a rupture of the whole extent of the cordiform or tendinous portion of the diaphragm had taken place, in a transverse

direction, and that a portion of the stomach and small intestines had protruded into the thoracic cavity. There was no indication of inflammatory action having existed in any part of the alimentary canal, and the food it contained was not very great in quantity, and quite semifluid in its character.

The second case occurred about six months afterwards. The subject of it was a black gelding, seven years old, belonging to the above-named person, and had been in his possession for two or three years. He had also worked regularly and well during that period and up to Saturday, the 15th September last, on which day he returned home at night from a long and rather heavy journey, apparently in his usual health; and after eating his allowance of corn, &c., was turned out for the night. On the following morning, at an early hour, he was found to be lying down, with a dull and drooping countenance, and from the state of the adjacent ground, had evidently been very restless for some time. He was immediately brought home, and I was consulted. I will not trouble you with a minute description of this case, suffice it to say, that he had what, in common *parlance*, is called the "belly ache," for which he underwent the treatment best adapted to alleviate his sufferings, and to remove the cause of them, in the shape of anodyne, aperient, and antispasmodic medicines, followed by bloodletting, blistering of the abdomen, raking, clystering, &c. &c., all of which proved unavailing, for he, like his unlucky companion, succumbed to the disease. The condition of his body after death was precisely the same as that described in the foregoing case, viz., rupture of the diaphragm to a great extent, and displacement of a portion of the abdominal viscera.

This horse, unlike his fellow, remained in the standing position from the time he was brought into the stable until the following morning, when he died; with the exception of his lying down twice or three times very quietly, and unaccompanied with struggling when down.

You will at once infer that this has been a very serious pecuniary loss to the proprietor of these animals, and as it is most desirous to guard against a recurrence of such ill luck, I have thought it advisable to give your readers a detailed account of these cases; and if you, or they, can throw any light upon the cause which gave rise to these attacks, for the Latin phrase, *causa latet res est notissimæ*, is most applicable here, you or they will, by expressing your opinions, confer a favour that I shall hold in high estimation.

The nature of the work in which these horses were engaged, was to convey, in covered carts or waggons, heavy loads of

grocery and drugs, frequently to long distances; and, like most horses of that class, they generally left home with full stomachs, performed their journeys without being taken out of the shafts, and returned to their stable with ravenous appetites. I cannot divest my mind of the impression that these long fasts, followed by large meals of hastily swallowed, and partially masticated food, combined with the great amount of physical exertion they were called upon to perform, must have been instrumental in producing these serious and irremediable attacks.

I am sorry to have trespassed so long upon your indulgence, but the importance of the cases, and the deep interest I feel in them must be my excuse for so doing.

I remain, dear sirs,

Yours very truly.

[We feel disposed to concur in opinion with Mr. Carless. The time was, when these abdominal attacks were extremely prevalent among the dray, and cart horses of London; they were also very fatal. The use of "nose-bags" has rendered them far less frequent. There can be no question but an impairment of the digestive organs would supervene upon such a course of procedure, and debility of the tissues follow as a consequence; hence their frequent liability to take on inflammatory action, or even to give way upon any undue exciting cause being applied.]

FOUR CASES OF TETANUS SUCCESSFULLY TREATED WITH HYDROCYANIC ACID.

By J. WOODGER, M.R.C.V.S., Market Street, Paddington.

Case 1.—A brown cart-gelding, belonging to Mr. Ferguson, contractor, Paddington, became suddenly affected with tetanus. No cause could be assigned for the appearance of the disease; it was, therefore, considered idiopathic.

I had the animal at once removed to a large coach-house, very quietly situated, ordered a full dose of purgative medicine (Sol. Aloes cum Ol. Lini.) to be given, and applied a sheepskin over the loins. Very little of the medicine could be administered, in consequence of the jaws being so much closed.

With such symptoms as the case presented, the chances

of a successful issue appeared extremely improbable; however, as my patient was young and valuable, his owner desired that I would make every possible effort towards effecting a cure. I could give no medicine by the mouth, consequently I resolved to try hydrocyanic acid in the form of enema. I consequently administered it in that way, in drachm doses, twice a day, in about a pint of warm water, using, for this particular purpose, the old-fashioned clyster-pipe, viz., the bladder and tube, in preference to the pump. This treatment was persevered in until four ounces of the acid had been given, by which time, the loins were rendered excessively sore, from the application of the sheepskins. My patient was now so far recovered, that I discontinued all further treatment. Improvement was first noticed on the sixth or seventh day.

Although at this period he was considered to have recovered, yet there was a degree of rigidity observable in the whole muscular system when he was walked out. Another fortnight was allowed him, and he was then put to steady work, at which he continued up to about two months since, when he was sold at a public auction, with other horses belonging to his owner.

It is, perhaps, worthy of remark, that this horse was particularly fond of a bran mash, and ate extraordinary quantities of it, or rather sucked it up, during his illness, which had the desired effect of keeping his bowels open.

Case 2 was a bay mare, belonging to Mr. Hartley, of Walham Green. The disease supervened upon docking, and it would therefore come under the denomination of traumatic tetanus. My attention was called to her on January 7th, 1854. The jaws, as in case No. 1, were too close to admit of the exhibition of medicine by the mouth. I amputated about two inches more of the dock, and allowed it to bleed; which it continued to do for several hours.

I here pursued a very similar course of treatment as that adopted in the foregoing case, and at the expiration of three weeks the same favorable result followed. The mare was allowed to run in a large loose box for a period of nearly three weeks afterwards; she was then put to her usual (*omnibus*) work, at which she still continues.

Case 3 was a bay cart gelding, belonging to Messrs. Williams, Shepherd's Bush. He was sent to the infirmary, affected with tetanus, May 13th, 1855.

The disease was attributed to a fall, while working on the

railway at Shepherd's Bush; which fall had caused a superficial cut upon one of the hind extremities, by its coming in contact with one of the railway trucks. The disease appeared about a fortnight subsequent to the fall. In this instance, also, I could not succeed in giving medicine by the mouth, and consequently had recourse to the medicated injections and sheepskins. The horse remained in the infirmary three weeks, was then discharged convalescent, and, after a run at grass for about four weeks, he resumed his work, which at present he continues to do.

Case 4, was a bay cart-gelding belonging to Mr. Ferguson, contractor, Paddington. My attention was first directed to him on the 10th September, 1855. In this case, as in the former one belonging to the same person, the disease came on without our being able to attribute it to any cause; and again no medicine could be given by the mouth. I therefore adopted the same treatment as recorded in the foregoing cases, and in three weeks the animal was so far recovered that I discontinued treatment, and after a further rest of about a similar period, he was put to his usual work, at which he is at present, and looking as well as ever he did.

Remarks.—It must not be inferred that I wish to attach undue importance to the treatment resorted to in the above cases, for I would observe, that I have treated similar cases, in the mean time, in precisely the same way, but they have not been attended with the same favorable results; still I think sufficient has been advanced to show that hydrocyanic acid may be of use in this disease.

I would add, that I am indebted for the suggestion of employing it in the form of clyster, to Professor Spooner, who kindly saw a case with me some fifteen or sixteen years since.

CASE OF INVERSION OF THE UTERUS OF A COW.

By THOMAS SHENTON, M.R.C.V.S., Bakewell.

May 5th.—I received a message from Mr. Hinch, miller, Stoney Middleton, desiring my immediate attention to a cow which had that morning inverted her uterus. She calved about 8 o'clock, and while the men were removing the calf to an adjoining standing, she strained violently, and her womb came down. I arrived at his place about three in the afternoon, when I found the cow stretched out at full length moaning and straining most piteously. They had protected

the womb, as well as they could, by wrapping it in a sheet; but notwithstanding the care that had been taken, it was very much swollen and discoloured; and portions of straw and dung adhered to it. Two persons had tried in vain to return it, and in doing so, had torn off several of the cotyledons. The animal would not make the slightest effort to get up, and it was quite obvious that it was impossible to return it as she lay; therefore, after carefully detaching the placenta, I washed it with warm milk and water, and then dressed it all over with a mixture of Tinct. Opii, brandy, and Ol. Lini. After which, with the aid of a strong rope attached to each hind leg, and two men supporting her loins with a sack, I drew her up a foot or more from the ground, and attached the rope to a beam above, two assistants all the while sustaining the womb with the sheet. I now applied my clenched hand to its fundus, and by pushing gently forward, I was enabled after some time to carry that portion of the womb into the vagina; at the same time an assistant was pressing the sides moderately, so it was soon replaced, the position of the cow being so much in our favour. Before letting her down, I placed three sutures of strong white leather through the skin covering the ischial tuberosities, and which, when drawn moderately tight, completely covered the vagina. This I have found decidedly the best way of suturing in such cases, as it is almost impossible, with any force the cow can use, to break them.

I gave her—

Tinct. Opii, ℥iv;
Spt. Æther. Nit., ℥ij;
Magnesia Sulph., ℥x.

in a draught; told them to foment the parts during the night, packed her up, and made her as comfortable as circumstances would permit.

6th.—I found her straining a good deal; she had not been on her legs; pulse 90, and there was a considerable swelling about the vagina; but it was not discoloured. The medicine not having acted on her bowels, I repeated the salts, with the addition of Sulphur, ℥ij, Antim. Tar., ℥ij, and Camphor, ℥ij. Ordered her a little bran mash. The fomentations to be continued.

7th.—She did not strain so much; swelling of the vagina not increased; her bowels had been freely acted upon; pulse quieter. Gave her a little fever medicine, and directed them to give her gruel frequently, of which she seems very fond.

8th.—She appeared in every respect progressing favorably. I gave her a little cordial-diuretic medicine.

10th.—Still going on well. I did not see her again till the 13th, when I removed the sutures. She did not require my further attendance.

CASE OF ACUTE ARTHRITIS IN A COLT.

By the Same.

MR. HUNT, of the Green-Field, had observed for several days previous to the 4th of July last, a two-year old colt of his going stiffly behind. A neighbour who had seen it, considered it "chinked in its back." To-day it appears so much worse that my opinion is sought. I found it, indeed, stiff enough, for it could scarcely move, but the hocks, and not the back, were evidently the seat of the ailment, they being swollen, and so sensitive that the slightest pressure caused the animal to catch up his leg, and almost fall over. His pulse was 84, and wiry; much injection of the visible mucous membranes; bowels torpid, and appetite almost lost. It was with considerable difficulty that we could get him to walk into a loose box close by. I considered it a case of acute arthritis.

Treatment.—Bled from the neck to the amount of four quarts, when the pulse faltered. Gave Aloës bb., ʒiv, and kept the hocks constantly wet with cold water. Applied also a lotion of Plumbi. Acet. frequently.

July 5th.—Worse in every respect. He could scarcely stand for two or three minutes together, and the hocks were very hot and sensitive. Pulse 90; the breathing very much hurried, and membranes again injected. Nothing has passed his bowels since I saw him yesterday. He sweats occasionally about the flanks. Punctured the saphena veins, from which I should think we obtained full five pints of blood. Continue the cold water, and lead lotion to the hocks; and give, night and morning, the following ball:

℞ Rad. Colchici,
Ext. Belladonnæ,
Camphoræ, āā ʒj;
Calomel, gr. x. Misce.

6th.—Much the same in every respect, and has not been observed to urinate. Ordered an injection of warm soap and

water to be thrown up two or three times during the day. Gave Ol. Tereb., ʒj, and the balls, as before, with the addition of Aloes, ʒij.

7th.—He has purged slightly, and staled two or three times. The urine smelled very much of the turpentine. In other respects he seemed much the same as yesterday. Balls as before, ordered, omitting the aloes.

I continued the same treatment, but with no visible alteration in his condition until the 11th, when a change for the better was evidently taking place. The pulse and respiration were quieter; he would get up and stand for a quarter of an hour together, but he could scarcely be induced to move. Directed the ball to be given once a day. Rubbed his hocks with camphor liniment.

13th.—I was surprised to find all heat and tenderness had left the off hock. The fetlock joint was now swollen, but not so tender to the touch as the hocks had been. In every respect the animal was better. From this date he kept gradually but slowly improving, and was for a long time in a strange emaciated state, but has now regained his wonted health and condition.

CASE OF SCIRRHOUS OS UTERI IN A EWE.

By the Same.

IN the spring of last year I was at Stoney Middleton, when Mr. Marples, saddler, asked me to look at a sheep which he said had been in labour since the night before, but had made no progress, and was now very much exhausted. It was a case of scirrhus os uteri. I told him I would divide the stricture as the only means of saving her, but in her case it was almost a "forlorn hope." However, I did divide it, cutting in two places, parallel with each other, and with a good deal of difficulty extracted a large lamb, that had, from its appearance, been dead some time. The parts were dressed with some emperical mixture they use on such occasions. I gave her a little Spts. Etheris Nit. et Ol. Lini, after which she was removed to a shed.

Being in the village again in about ten days, I was very agreeably surprised to find her eating hay, and apparently in good health.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Lecturer on Veterinary Medicine and Surgery, London.

(Continued from p. 701.)

INCOMPLETE DISLOCATION OF THE OCCIPITO-ATLOIDEAN ARTICULATION IN A MULE.—A three-year old mule was, after work, set free in a shed; an hour later, she was found motionless, with depressed and outstretched head, standing at a distance from the other animals. Vives, V. S. at Campagne, was called, and he found that the head could not be elevated beyond its natural height. If any attempt was made to raise it further, great pain was evinced; the animal backed and fell. Great sensibility of neck, swelling and remarkably oblique position of occiput, whereby the head was turned to the left. The mule was dull, looked as if stupefied; pulse slightly frequent, and the eyes injected. The diagnosis was—dislocation of the atlas at the occipito-atloidean articulation. Another veterinary surgeon supported Vives in his opinion.

The following day the pulse and breathing were more rapid, the eyes half closed, the neck still more swollen, and the animal more feeble in the loins.

The treatment consisted in bloodletting, and emollient fomentations to the neck, in virtue of which the general condition of the patient ameliorated, but the dislocation remained the same. Eight days after, with the exception of weakness of the left hind limb, there was only observable the sunken and outstretched position of the head, with deviation to the left. A strong ointment, rubbed over the neck, induced some improvement, excepting in the position of the head, which, thirty-five days after the accident, was much the same. Vives did not at first wish to reduce the dislocation; and it appears the proprietor of the animal was contrary to it; they waited to see what might follow.

It was doubted if such a dislocation could exist without paralysis. —*Journ. des Vét. du Midi*, September, 1854.

In the month of June for this year, M. Vives writes again, to inform us that the mule continues in the very same state, never having shown symptoms of compression, such as paralysis, &c. Vives says, it has generally been supported that displacement of the articulations of the vertebræ cannot

occur without compression, but, as proof to the contrary, he cites another very interesting case.

In the autumn of 1853, being at the fair of St. Jacques, he observed an aged horse with a singular deformity of the spine. At the anterior part of the lumbar region there was a sudden curve downwards, the back part of the column coming at an obtuse, or nearly right, angle with the dorsal portion; the abdomen was thus brought so low, that as the animal moved along, it nearly touched the ground. Vives questioned the owner, and found that some years back, the horse being out in the fields during a great storm, a tree, which the wind had uprooted, fell on the horse's back, and fixed the poor animal to the ground, till some considerable time afterwards, when he was extricated, in a very serious condition, and unable to rise. His owner, out of affection and gratitude for his long services, would not have him killed. The horse lived, and regained his strength, so that he could be *ridden* weekly to market and back. Vives says, he should never have believed the animal could have borne the weight of a man on his back, had he not been an eye-witness to it. Vives adds, in a somewhat caustic manner, "let us ask those men who view things alone through the eyes of theory, if it is still permitted to doubt the possibility of dislocation of the vertebræ without consecutive paralysis?" He, moreover, says, that he will endeavour by all means to trace the above animals to their last home, that he may record the morbid lesions, as observable after death.—*Journ. des Vét. du Midi*, June, 1855.

Unfortunately for us, veterinary surgeons have gone on, for too long a time already, blinded with the idea that they were exclusively practical men, disregarding, entirely, close study and close observation, in fact all true science, including it all under the misunderstood and abused word "theory." Other members of our profession, on the other hand, attempting to fill every chasm in literature or instruction, by what they wished merely *to suppose or infer*, perhaps, from false analogy, have been treated with contempt by the self-styled practical men. We need not be astonished, then, if M. Vives is rather pungent towards those gentlemen who *infer* that the vertebræ may not be dislocated without inducing compression of the cord.

In the last month's number of this Journal, I introduced the particulars of a case of dislocated vertebræ, observed by M. Husson, in Brussels. Here we had great displacement of the third cervical vertebra, hence above the origin of the phrenic nerves, and the result was instantaneous death by asphyxia.

Dislocations of the vertebræ are rather rare, and are invariably very serious lesions, most times proving fatal; but several cases have been recorded of incomplete dislocations of the cervical vertebræ, especially by Gohier, Lebel, and Godin. These have, in a great measure, though falsely, been explained away by persons who could not understand displacement of these bodies without injury to the cord, and it is extremely important that M. Vives can now contribute so much to settle the question.

Respecting the case of distorted spine, the result of injury, recorded by M. Vives, it is very interesting, bears directly on the subject, but is not unique. I believe some specimens are to be seen in the museum at St. Pancras. I made two photographs, when at Berne, in Switzerland, from singularly distorted spines. The one was congenital, and describes the figure of a letter S; some of the posterior dorsal vertebræ are represented as anchylosed. In this instance we should not have expected compression; but in the second case there is disease of the spine, the thirteenth, fourteenth, and fifteenth dorsal vertebræ being implicated. Caries and atrophy had gone on on the off side, the spine thus became bent, producing a large protuberance to the left, and along this side the ribs are distorted and pressed out, the vertebræ themselves having become united by osseous deposit. Professor Gerber told me that this animal had lived on thus for a long time, and, moreover, the celebrated professor added that he knew of another horse, then living, in whom this kind of preternatural spinal curvature was still more exaggerated; the animal, nevertheless, was still very useful, drawing a greengrocer's cart to market weekly.

NYMPHOMANIA IN COWS.—Schmidt refers to the confusion which has arisen from confounding this disease with tuberculosis, tubercles often being found, accidentally, on the serous membranes of cows who have died with violent desire for sexual intercourse. Schmidt has seen this nymphomania only in old cows, which presented the following symptoms:—cows apparently in perfect health have been to the bull twice or thrice without being stinted. The mammæ, especially the anterior quarters, shrink in size, the secretion of milk strikingly diminishes and curdles on boiling; the cows are very restless and uneasy, whether in the shed or out of doors; they appear terrified at any strange object; very frequently ride upon each other; rub their horns against a post or trough, or use them to throw up their litter, or more willingly to perforate, as it were, loose soil, such as molehills, before which they are apt to stop, staring, and

kneel down, to get at them more readily. Like bulls they willingly scrape the ground up with their feet, and have a strange bull-like bellow. This bellow becomes stronger and continuous, even in the shed, night and day, but more especially heard in the morning. In some animals it is not so strong but rather low. In rare instances this symptom is altogether wanting or very rarely loud. The sacrosciatic ligaments, if they have not already remained loose since the last calf, become so, especially at their posterior margins, whereby there is a greater excavation than usual between the tail and ischia. The pudenda and vagina are only rarely very red, and discharge of mucus is also rarely observed. From being excited and impatient they absolutely become wild, jump over their enclosures, run about, and even make directly for men.

The appetite, like all the functions of vegetative life, is undisturbed, but nevertheless, from their very excited condition, these cows lose flesh rapidly.

Schmidt says that the disease is common in Kettwig, it is not a rare affection in Switzerland, and in Upper Suavia, Ulrich Schneider, from the year 1829 to 1851, spayed not less than 772 cows for it.

The post-mortem appearances, as observed by Schmidt, were invariably as follow:—no fat betwixt the muscles, which were of a bluish colour, and emitted the characteristic odour of the flesh of a bull. The uterus, powerfully contracted, contained a large amount of mucus of the colour and consistence of the albumen of the egg. The ovaries are firm to the feel, and include many enlarged Graaffian vesicles, varying in size from a hazel to a walnut, filled with a yellowish fluid. There is no determination of blood to the generative apparatus. The digestive, respiratory, and urinary organs are free from disease. In one case, in which during life there was a peculiar look of the eye and twisted position of the neck, Schmidt found, in the cranial cavity, much limpid serum. As he had not examined the cranium in preceding cases, Schmidt knows not if this lesion is constant, or merely in this instance as the result of a concomitant affection.

The causes of nymphomania are, according to Schmidt, rich forage, warm sheds, and perhaps preventing the cows from suckling their young.

It is strange that so many cows, although they show a desire for the bull eight or ten times during a summer without ever being put to him—often seen where they are well fed with oil cake—do not become affected with nymphomania.

The country people believe, retention of the placental membranes, also cows being frightened, especially if they smell blood, are causes of the affection, but Schmidt has not observed that such was the case.

To cure these cows radically, it is essential to spay them; but in most cases Schmidt recommends the danger of the operation not to be incurred, and the animals are to be sold to the butcher.—*Mag. für die ges. Thierheil.*, April, 1855.

Violent desire for sexual intercourse, amounting to a morbid condition—called *satyriasis* in the male, *furor uterinus*, *hysteromania* or *nymphomania* in the female—has, so far as my knowledge extends, not been described by British veterinarians. Does the disease exist, or does it not, in our island? I glean from Professor Hering's learned work on the 'Pathology of the Domestic Animals,' that the affection is most frequent in the female, especially the mare and cow.

Rychner, in his 'Buyatric,' alludes to the fact that there is nothing in common between tuberculosis and nymphomania beyond that they are sometimes concomitant.

Essmann has described, in Gurlt's Magazine for 1848, an over-excited state of the generative organs in cows that have recently calved; the animals bellow much, butt with their horns, become emaciated without tuberculous deposits in the thorax, but on the contrary, the ovaries are enlarged and contain large serous cysts.

Schneider has spoken of a form of the affection in which the animals were bulling every fourth or sixth week, but sometimes they would die in convulsions in from a few hours to three days. After death, blood was found effused in the uterus, and even in the broad ligaments; the ovaries were gorged with blood.

A REMARKABLE LAMENESS IN A COW.—Carl Hollmann was requested, on the 4th of August, 1854, to attend on a cow that had been lame several days. On examining her he found an injury to the sole of the near hind foot, but having cured this the lameness persisted. When moved out of the stable a second time, it was observed that it was with difficulty she lifted the lame leg over the high threshold of the shed. Nothing peculiar was discovered about the hock, but it appeared that the patella was not free in its action over the femur. There was no swelling around the stifle but some pain on pressure. The cause of the lameness was unknown, and the proprietor only knew that the cow had returned lame one evening from the field in which she had been grazing. Hollmann caused the lame limb, especially round the stifle, to be strongly rubbed; and he saw

the cow daily for some time without recognising any improvement.

About ten or twelve days after the first appearance of the lameness, Hollmann observed, on causing the animal to advance, that when the limb was carried forwards the hock was perfectly flexed, and at that moment a wrinkle was observed in the tendo-Achillis between one and two inches above the os calcis. When the animal lifted up its leg the parts below the hock hung loosely backwards, and might be freely moved backwards and forwards. The tendon of the extensor metatarsi was then bent into folds, but if the animal supported itself on the lame leg the angle at the hock joint was normal and the tendo-Achillis was on the stretch.

The lameness did not improve, and as on the 16th of September the animal was also lame with the other hind leg, the proprietor decided on trying to fatten her for the butcher. The lameness of the off hind limb was cured in about eight days, and during this period the animal had principally rested on the near foot without getting worse on it.

Hollmann often saw the cow till the 30th of November, without perceiving any change in the lameness. Up to the 30th of October she did not thrive, but since then her coat looked smooth, and she laid on flesh. On being taken to the slaughter-house it was observed that she was as lame as ever.

On *post-mortem* examination, the tibialis anticus, peronæus, and gastrocnemius were found healthy. On elevating the patella, the rectus femoris, towards its outer side, was found containing a morbid product of firm consistence, appearing to be something betwixt tendon and cartilage. On cutting through the muscle it was found of a greyish yellow, or sometimes paler colour, like cooked meat, with a few normally tinged bundles of fibres passing through. The diseased portion, which was situated between one and two inches above the patella, was firmer than natural, beyond which the muscle was of normal texture and fibre. The articulation of the patella was healthy. In the femoro-tibial articulation, having cut through the inner semi-lunar cartilage, the articular cartilage was found destroyed over a surface the size of about a fourpenny piece, without other signs of disease. Hollmann laments not having had an opportunity to examine the muscle by the microscope, but says there is no doubt that there had been rupture and cicatrization of the rectus femoris.—*Mag. für die ges. Thierheil.*, April, 1855.

In spite of all difficulties, we are advancing slowly, but in a sure way, to determine the exact nature of lamenesses in ani-

mals,—thanks to accurate observers, who do not content themselves with the study of symptoms, but ably undertake *post-mortem* examinations.

It is only since last July that we have undertaken to record the progress of Veterinary Science abroad for the benefit of our professional brethren in England, and in this short space we have had occasion to quote and comment upon most important observations respecting lamenesses, such as those by Villatte and Goubaux on shoulder lameness; Turner and Mascher on sesamoid and navicular disease; and now Hollmann on an affection of the muscles of the thigh, associated with dubious symptoms. I must not omit to allude to Mr. King's case of obliteration of the arteries inducing lameness, and Mr. Varnell's important report on the same, published in this Journal.

If we advance like this we shall not have occasion to resort, as is done even up to the present day, to the *shoulder* or *hip joints*, or to *rheumatism in the feet* or elsewhere, as scapegoats to hide our ignorance. Rheumatism may occur, as well as shoulder or hip-joint disease, but generally associated with marked and well-defined symptoms; we are not to take them in the light of essentially obscure diseases.

Respecting Mr. Hollmann's case, although it occurred in a cow, it is such as we might expect in the horse. Some hind leg lamenesses are occult, and Hollmann, in his paper, says, that at one time he was inclined to regard the affection as one, described by Hertwig in the 13th volume of the Magazine, of rupture of the flexor metatarsi and peronæus. I find in Hertwig's paper a reference to Mr. Cartwright's very interesting case of rupture of the flexor metatarsi in the *Veterinarian* for 1841. It may gratify Mr. Cartwright and every other contributor of the *Veterinarian*, to know that *not a single fact* recorded by them escapes the notice of their learned brethren in Germany, and it is in the German works that the British contributors figure the most.

Connected with Mr. Hollmann's case, I must refer the reader to a most instructive one published by my friend, Mr. Hunting, in the *Vet. Record* for 1850. It is not exactly of the same nature, but implicating the same muscle, and the symptoms accordingly varying. Mr. Hunting's case, which now acquires great interest, was one of paralysis of the rectus, with atrophy of it and of the crural nerve.

There are some lamenesses of importance which occur, the notes of one of which I possess, but space forbids me transcribing them here, in which the trochanter minor externus of the femur, or of the tendon of the gluteus externus, or

both, suffer. They are generally caused by horses slipping back in trotting, or dragging loads along a slippery pavement, or in the stall as the animal is rising. We find in these instances laceration of the tendon of the gluteus externus, and even partial or complete fracture of the trochanter minor. Besides having seen a very marked case during life, I have drawn three femurs from specimens in different museums indicating similar lesions.

THE ACARI OF SCABIES IN MAN AND ANIMALS.

“THE CONTAGION OF SCABIES (MANGE, ITCH) FROM ANIMALS TO MAN.”—According to Bourguignon the contagion of scabies from animals to man was held as incontestable, before he himself and Delafond proved the contrary. All diseases of the skin of animals were held as mange. And although Gohier, Rose, Hertwig, Viborg, and others, cite examples of man having contracted the disease from brutes, it had not been scientifically demonstrated in these, hence it could not be irrefutably proved as occurring in man by contagion. The acarus of the dog was unknown till November, 1854, when M. Delafond discovered it, and still most of the diseases of the skin of this animal were considered of the nature of psora and transmissible to man.

To avoid all sources of fallacy, Bourguignon considers no case of transmission of scabies, from animals to man proved, unless the same acarus is discovered in both, and unless all the symptoms of itch in man are discoverable. The acarus of the horse may produce transient phenomena when placed on the skin of man, but the *acarus equi* dies shortly after changing abode; hence if men attending on mangy horses suffer from prurigo, if they keep away from the diseased animals a few days, all the symptoms will disappear without specific treatment, proving that they are kept up by a continuance of the cause, new acari passing over the skin constantly, but not taking up a permanent abode or procreating.

Bourguignon at first believed, as every one else, in the contagion of scabies between animals of different species. Nevertheless, patients having presented themselves at the hospital of Saint Louis as affected with the mange of the cat, dog, or horse, without that Bourguignon could discover any other than the acari of man, doubts arose in his mind, and he began to experiment. He placed on his skin acari of the horse; he was pricked by them, suffered from itching, but nothing further. He concluded that the transmission could not be effected. The acari of man, placed on dogs, cats, rabbits,

birds, &c., did not live beyond from ten to twenty days, nor could the disease be provoked, hence it appeared that the itch of man was not transmissible to animals. A few years later, MM. Bourguignon and Delafond worked together at the subject, but could in no instance communicate scabies between animals of different species. Some hundred acari from the sheep and horse were placed on the skins of many of the students at Alfort, and nothing resulted beyond the pricks made by the insects in search of sustenance, and slight itching. Other attempts were made with the scab-insect from the sheep, applying it on horses, oxen, goats, &c., but with the same result.

It was discovered, however, that, contrary to what is seen in man, in animals it was essential to lower the system, to get them in ill health before the disease would spread even among individuals of the same species. A vigorous constitution is no obstacle to the spreading of itch in the human subject.

The brief sketch here portrayed of this subject indicates the state of our knowledge in point and capable of appreciating now any new facts contributed, the cases which form the basis of M. Bourguignon's memoir may now be cited.

An exhibitor of wild animals, M. Borelli, bought five lions at Marseilles coming from Africa, all in middling health; they suffered from captivity, from want of air, of exercise, and of good food, but their skins appeared healthy. They were taken to Paris, one died in the Jardin des Plantes, the others were exhibited at the Cirque Franconi, in company with a hyæna and a bear. Their health went on deteriorating, a second lion died, which was conveyed to the Alfort School, where MM. Goubaux and Delafond found the skin covered with scabs due to mange, and the presence of a large number of acari. MM. Delafond and Bourguignon proceeded to the circus, and found a boy who attended on the animals affected with the itch. The lions were mangy; and since the boy had been washing the lions with the same sponge used for the horses of the circus, six horses and three grooms became affected with the disease. M. Borelli and his daughter, who habitually entered the cage of these animals during the representations were also affected with scabies. The acari obtained from the lions, and those infesting the men and woman were identical. One of the lions, the youngest, in a miserable state of health, and suffering with cold, kept close to the hyæna for the sake of warmth. For a while, the hyæna seemed perfectly to withstand the contagion, but three months afterwards, psora, with all its symptoms affected both

hyæna and bear. Going to the Jardin des Plantes, M. Bourguignon discovered that two of the guards had become affected with scabies ever since M. Borelli's lions had been kept there, and one of the guards had communicated the disease to his wife.

Under appropriate treatment, the men speedily got well, and the lions too were recovering from the general sickly state in which they were, but being kept badly, two more, with the hyæna, soon died.

It results, says Bourguignon, from all these facts, that five lions, brought to Paris, in a miserable state of health, and already affected with mange, as they communicated it to the guards of the Jardin des Plantes, have transmitted the affection, in a direct manner, to five persons; and in an indirect way, a cutaneous affection has been provoked, on three grooms and six horses; it results, moreover, that this instance of contagion of scabies from an animal to man, the only one as yet *scientifically demonstrated*, may be explained by the absolute identity of the active element of contagion, viz., the parasite of man and the lion; that a hyæna and a bear submitted in vain for several months to the most powerful causes of contagion, have lastly ended by being absolutely contaminated; that lastly, the psora has assumed a very dangerous and even fatal form in these animals, perhaps because they were in the most favorable conditions to succumb under the affection.

The important question which remains to be solved is, if it was the parasite proper to the lion, or the acarus of man that was the active element of contagion? Not having lions to experiment upon, Bourguignon has commenced some experiments with the cat, believing that there is some analogy between the mange insect of the two. Bourguignon inclines to the belief that the acarus discovered on the lions is the true acarus of the lion, as he finds the acarus of the cat almost identical to it; with the exception of some slight modifications of the secondary organs, the parasite of the cat is the same as that of the lion, only it is smaller. Thus Bourguignon believes the first cause of contagion in the Circus arose with the lions.

On the other hand, by analogy, it may be presumed that the parasite of the cat will live on man, inasmuch as it is provided with all the organs to incise the epidermis, puncture the dermis, and proceed along the usual furrows beneath the cuticle.

Bourguignon has taken some of the acari, found alive on the lions and on the hyæna, and placed them on the horse,

the dog, the sheep, the rabbit, the guinea-pig, the monkey, and on man, and he is studying the effects of this direct contagion. The results of these experiments will be published in due course.—*Memoir read on the 16th of February before the Society of Medecine of the Department of the Seine.*—*See Gaz. Hebd. de Méd. et de Chir.*—*Ann. de Méd. Vét. Bruxelles*, June, 1855.

It is my intention here to refer to the history, and briefly to the characters, of those acari of the domestic animals which it is essential for the veterinarian to be conversant with, especially should any doubtful cases of contagion be brought before him. Walz, in 1810, described the *sarcoptes ovis*; it has been figured by Youatt in his work on sheep, and has therefore not been introduced in our plate, to give place to other less generally known species. The *acarus equi* was spoken of and delineated by Kersting as far back as 1784, and several drawings of it have since appeared; the chief ones being by Raspail, Hertwig,* Hering, and the most complete ones of all by Erasmus Wilson. The *acarus* of the ox, spoken of by Gohier, of Lyons,† was described by Hering in 1845, and the two drawings of it in our Plate are from the *Repertorium* for the same year. The *sarcoptes cani* has, so far as we are aware, not yet been delineated. Hertwig has spoken of it;‡ Hering has not seen it, and Delafond is said to have discovered it last year. Amoreux and Grogner cite instances of the contagion of scabies from dog to man, sheep, cows and camel. Viborg and Hertwig speak of scabies in man developed from contact with dogs affected with the disease. Hertwig says it agrees very much in form with the *acarus equi*; it is, however, smaller, and has some broad strong hairs, somewhat feathered in appearance, on the sides of the body.

The *acarus* of the cat was first delineated and described by Hering. Bourguignon, in his memoir, seems to me not to give Hering his due, as he is speaking of the *acarus* of

* 'Mag. für die ges. Thierheilkunde,' von Gurlt und Hertwig; Berlin, 1835, 1 Heft., p. 104.

† "The acari of cattle," says Gohier, in 1815, "are found in greatest quantities on Hungarian oxen affected with scabies. Under the microscope they were not found very different from those of the horse. Their transference on horses, dogs, and the ass, was followed by no result, although they were observed about thirty hours after under the epidermis, were they had inserted themselves; they appeared there to be broken up. (See the 'Compte Rendu,' of Veterinary School of Lyons, for 1815, or Hering, 'Ueber die Kräzmilben der Thiere,' in the *Nova Acta*; Breslau and Bohn, 1836.)

‡ Loc. cit.

the cat without reference to its discoverer. Hering's memoir is an imperishable monument to his industry and talent; much may be added from the vastness of the subject, but little amended or corrected.*

The acarus of the pig, classed by Hering, in 1835, amongst the doubtful species, has since been discovered by Gurlt, in 1846, and Hering having seen it after him, says that it resembles more the itch-insect of man than any other.†

The *acarus hominis*, which has often been the subject of spirited discussions and misrepresentations, has recently been carefully delineated and described; first, by Dubini,‡ and next by Bourguignon.§

I have lastly to allude to *pus acari*, which should ever carefully be distinguished from the *acari scabiei*. The *sarcoptes cynotis*|| (Hering), *sarcoptes hippopodos*¶ (Hering), and probably the *sarcoptes setosus* of Dr. Thudichum belong to this class. The last-mentioned was discovered by my friend Dr. Thudichum, on a man that was supposed to have contracted scabies from a cow. The patient owned a cow that, being mangy, he had been in the habit of dressing with the liquid flowing from the dunghill. He soon showed symptoms of itch, and imagined he had caught it from the animal. Dr. Thudichum, who tells me he also saw the cow, truly believes it was an instance of direct contagion. One thing is certain, that the *sarcoptes setosus* is not the true *sarcoptes bovis*, and if any skin affection was excited, it was through the transmission of a *pus acarus*, and not through the acarus of scabies. It is fortunate Dr. Thudichum made such an admirable drawing; we have introduced it in our

* In Hering's memoir, we find that Hofacker thought the acari of the cat were most frequently to be seen on the Angora breed, with long coat, but it appears, Hofacker did not know the acari; and Hering has seen them in different breeds, and at different ages.
 "It is not known to me," says Hering, "that the acari of the cat may live on animals of other species; Hertwig (loc. cit.), informs us of an instance in which a horse became affected through a mangy cat. Dr. Berthold saw a child of eight years old that had contracted scabies in the same way (see Casper's 'Wochenschrift für die gesammte Heilkunde,' 1834, Nro. 20.). In one cat, affected with a dry scabby eruption, I found numerous acari quite different from those above described. On closer observation they showed themselves to be identical with the meal mite. The cat was from the house of a baker." (Hering, loc. cit.)

† Hering, 'Specielle Pathologie und Therapie für Thierärzte,' 2d edition, 1849, p. 200.

‡ 'Entozoografia Umana,' del Dottor Angelo Dubini; Milano, 1850.
 The most classical work extant on the subject of parasites infesting man.

§ 'Traité de la Gale de l'Homme,' par H. Bourguignon; Paris, 1852.

|| Cynotis, from *κυνων*, *κυνος*, canis, and *ὄψις*, *ὠτός*, auris.

¶ Hippopodos, from *ἵππος*, equus, *πῶς*, *ποδός*, pes.

plate, fig. 9. I must not omit to say that the specimen it was taken from was found on the man beneath the epidermis, in the substance of the skin. Like other *pus acari*, the *acarus setosus* had burrowed for itself cavities which were filled with pus; pustules and nodules existed on the surface of the skin in the interspaces between the holes.*

The *sarcoptes cynotis*, figs. 4 and 5, was found by Hering in the otorrhœa of dogs, commonly known as canker of the internal ear. The *Sarcoptes hippopodos*, fig. 8 of our plate, was first seen by the same observer in an inveterate case of canker of the foot of the horse, and subsequent investigations have confirmed the discovery.

In a pathological point of view, as related to the *pus acari*, we have the *entozoon folliculorum* of the sebaceous follicles of man, horse, and dog. Dr. Simon of Berlin first saw it in man, hence Vogt named it "*Simonea folliculorum*."† It is the *Demodex folliculorum* of Owen.‡ Mr. Erasmus Wilson first discovered the same parasite in animals; he found it in the Meibomian secretion of some eyelids of horses; it was identical with that of man.§ In 1843, Mr. Topping discovered these same animals in pustules upon the skin of a dog affected with the mange. It was supposed by him that they were the cause of mange, but Mr. Wilson believed the pustules resulted from inflammation of the follicles of the skin. Leblanc, in 1849,|| described the disease in which the *entozoon folliculorum* is found as one of which dogs die, in one or two months, in a state of the most complete marasmus. Mr. Simonds has kindly favoured me with some specimens which he obtained in 1851 from a dog suffering from extensive eruptions on the skin. Fig. 12 of the plate represents the parasite as delineated by Wilson. This entozoon is not truly an *acarus* but forms a distinct genus *Demodex* of Owen, or *Simonea* of the family *Simonida* of Vogt. It represents the lowest organized form of the class Arachnida.

* 'Uebertragung der Rindviehräude auf den Menschen,' von Dr. J. L. W. Thudichum, in the 'Illustrirte Med. Zeitung,' München, 1852, p. 259.

† Vogt, 'Zoologische Briefe,' vol. i, p. 500.

‡ Professor Owen says 'Of the generic distinction of the parasite there can be no doubt, and I therefore propose to call it *Demodex folliculorum*, from *δημος*, lard, and *ἐνξ*, the name of a boring worm, indicative of the habitat and vermiform figure of this parasitic Arachnid, which insinuates itself into the hair-follicles and the sebaceous glands that communicate therewith.' (See Owen's 'Lectures on the Invertebrate Animals.')

§ See the 'Transactions of the Veterinary Medical Association,' for 1844, p. 404.

|| 'Gaz. Méd. de Paris,' t. iv, No. 29, p. 572.

I have used the terms *Acarus* and *Sarcoptes* irrespectively during my remarks, just as authors have mentioned them; they are synonymous, British authors adhering to the former, whereas the Germans invariably use the second.

The genus *Acarus*, in my revered preceptor, Dr. Grant's classification, belongs to the order Tracheata, of the class Arachnida, in the Entomoid or Diplogangliated subkingdom. The generic characters, as given by Hering, are:

“Head retractile, snout double-valved, two or four thread-shaped palpi, no eyes. Body roundish, shield-like (vestudini-form, J. G.) Eight feet adapted for running, the four anterior ones springing from the circumference of the body, with tarsal discs; the four posterior with or without tarsal discs, mostly ending in long filamentary organs, either springing from the circumference or under surface of the body. Met with in the skin diseases of warm-blooded animals.

The first sub-genus comprises those acari in which the legs spring from the sides of the body; they are—

1st species: the third pair of feet each with two long hairy appendages and a tarsal disc; the fourth pair each terminating in two short hairs. *Acarus equi*; see figs. 1, 2, 3.

2d species: the third pair of feet, each with two long bristles without tarsal discs; the fourth pair with a long filamentary organ and a tarsal disc. *Acarus ovis*.

3d species: both hind feet with two filamentary organs each, without tarsal discs. *Acarus cynotis*; figs. 4, 5.

In the second sub-genus the fore-feet spring from the sides of the body, the hind ones from beneath the belly.

4th species: the hind feet terminate in a bristle without tarsal disc. *Acarus hominis*.

5th species: the fourth pair of feet each with a disc; the third pair, in the male alone, has a long bristle and short pedicled disc; in the female there are, on the contrary, two long bristles without disc; the processes from the hinder part of the body of the male are furnished with four bristles. *Acarus bovis*; see figs. 6, 7.

6th species: the hind feet terminate in a bristle without tarsal disc; the posterior part of the body nearly hairless. *Sarcoptes rupicaprae* of Hering. The acarus of the chamois.

7th species: the third pair of feet with a long filamentary organ; the fourth pair furnished with a tarsal disc. *Acarus cati*—of the domestic cat; see figs. 10, 11.

8th species: all eight pairs of feet furnished with long pedicled tarsal discs, without filamentary organs. Hind part of the body with eight feathered hairy appendages. *Acarus hippopodoss*; fig. 8. The *Acarus setosus* probably belongs

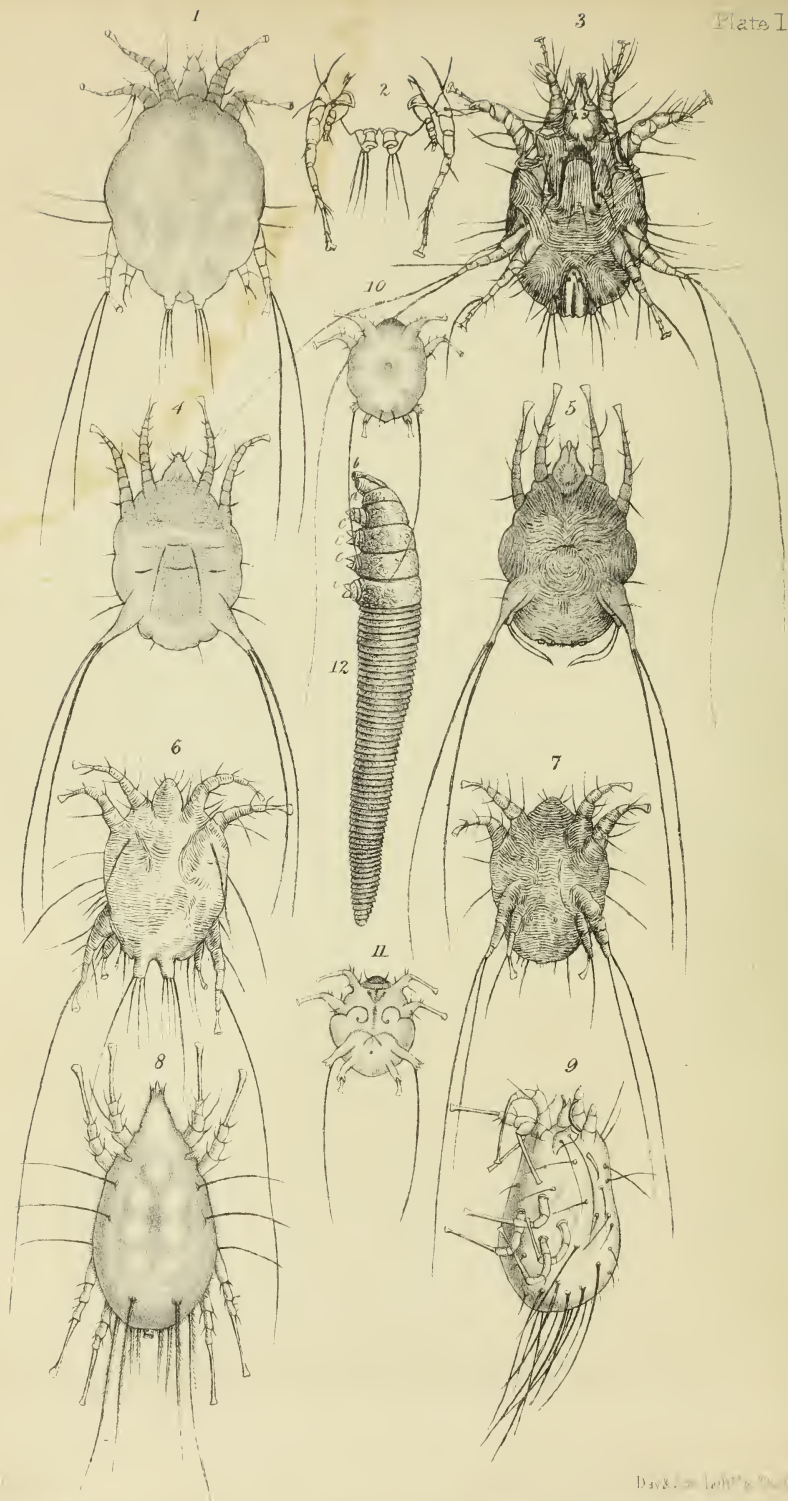


Fig. 1. *A. arvensis*. Fig. 2. *A. arvensis*. Fig. 3. *A. Bovis*. Fig. 4. *A. Bovis*. Fig. 5. *A. Bovis*. Fig. 6. *A. Bovis*. Fig. 7. *A. Bovis*. Fig. 8. *A. Bovis*. Fig. 9. *A. Bovis*. Fig. 10. *A. Bovis*. Fig. 11. *A. Bovis*. Fig. 12. *Demodex folliculorum* hominis.

to this species; so far as the legs are concerned there is no difference; there is, however, some deviation in the development of the free filamentary organs; see fig. 9.

16, UPPER WOBURN PLACE.

(To be continued.)

EXPLANATION OF PLATE I.

Parasites of the Skin of Man and the Domestic Animals.

- Fig. 1.—The acarus of scabies in the horse, *Acarus equi*. It is the dorsal surface of the male, after Hering. Tarsal discs present on all the legs, with the exception of the fourth pair, which terminate each in two short hairs. *Acarus equi* is known from all others, by the two processes from the hind part of the body, best seen at fig. 2.
- 2.—The posterior part of the body of a male viewed, upon its ventral aspect, after Wilson. *a a*. The third pair of legs of remarkable size, deficient of filamentary organs, but provided with tarsal discs. The fourth pair of legs are smaller than in the female, and without tarsal discs. *b b*. Two supra-caudal organs supporting three long filaments on distinct tubercles. *c*. Two sucker-like organs, apparently serving the office of claspers.
- 3.—The female of *Acarus equi*, representing the abdominal surface. Tarsal discs are present on all the legs, with the exception of the third pair, which are provided with two long filamentary organs. (E. Wilson.)
- 4, 5.—*Acarus cynotis*, from canker in the ear of a dog, after Hering. The fore feet projecting straight out anteriorly, of equal length and size, with five joints, and both pairs provided with short pedicled tarsal discs. The third pair of feet, short, thick, indistinctly jointed, terminating in two bristles. The fourth pair, about one fourth the length of the former, not quite visible from above, terminating in two short hairs. Natural size, 0·09 to 0·10 of a Paris line, their greatest breadth 0·07.
- 6.—The acarus of scabies in the ox, dorsal surface of male, after Hering. The fourth pair of feet with tarsal discs; the third provided with short tarsal discs, and a long hair. Two processes from hind part of body, armed with four filamentary organs.
- 7.—Ventral surface of the female of *Acarus bovis*, still after Hering. The third pair of legs without tarsal discs, but provide with two long filamentary organs.

Fig. 8.—*Acarus hippopodos*, of canker of the foot of the horse. Characterised by the acute shape of its body in front; no filamentary organs, but long tarsal discs to its hind feet, and eight feathered hairs, four long and four short, from posterior part of the body; the whole body is finely haired. Its greatest length is 0·16, breadth from 0·08 to 0·085 of a Paris line.

- 9.—*Acarus setosus*, from skin of man, after Thudichum. Supposed to exist also in the ox. Same characters as *Acarus hippopodos*, except the hairiness of body; scanty, erect bristles, however, spring from papillæ in different parts, which are wanting in *A. hippopodos*. The number and arrangement of the filamentary organs differ in the two. (Thudichum.)
- 10, 11.—The insect of scabies in the cat, viewed from above and below, after Hering. Third pair of feet with a long filamentary organ, without tarsal discs; but two thorn-like appendages. Fourth pair of legs short, ending in a short tarsal disc, and a thorn-like appendage. The smallest of all known acari, measuring from 0·054 to 0·061 of a French line in length, and from 0·048 to 0·054 of a line in breadth.
- 12.—The animal of the sebaceous gland; *Demoder folliculorum* (Owen): a side view. This animal has been found in man, the horse, and the dog, and probably exists in association with torpidity of the sebaceous organs in all animals. (Wilson.) Thoracic appendages (*c c c c*), eight in number, terminated by three short setæ, retaining the Anellidous type. Mouth suctorial, or proboscidiiform, consisting of two small spine-shaped maxillæ (*b*), and an extensile labrum, capable of being elongated and retracted; it is provided on each side with a short and thick maxillary pulp (*a a.*), consisting of two joints, and with a narrow triangular labrum above. (Owen.)

VALUE OF ALUMINIUM.

ALREADY the new metal aluminium has been proved of *practical* utility, since an alloy of 2 equiv. of it and 3 equiv. of iron does not oxidize when exposed to a moist atmosphere, although it contains 75 per cent. of iron.

THE VETERINARIAN, JANUARY 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE ANNUAL ADDRESS OF THE EDITORS.

“Time is dealt out by particles; and each
Ere mingled with the streaming sands of life,
By fate’s inviolable oath is sworn
Deep silence, where Eternity begins.”

“Time is Eternity;
Pregnant with all Eternity can give;
Pregnant with all that makes archangels smile.
Who murders Time, he crushes in the birth
A power ethereal, only not adored.”

So rapid is the flight of time it seems but as yesterday that, with mingled hopes and fears, we undertook the Editorship of this Journal. Nevertheless, the mighty earth which we inhabit has since completed its circuit round the mightier centre of its attraction, the sun; and the promised seasons have silently passed onwards in succession, adding another year to those beyond the flood. Well may we exclaim, ‘How momentous is time!’ The past, the present, and the future, constitute its periods. The *past*, where is it? The *present* is so brief, that while we are thinking rightly to employ it, it is gone; and the *future* is always to come. Truly, the sands of the hourglass of time are as precious as diamonds, and yet how little are they heeded by us! An eloquent writer of the day has said:

“There are three monarchs, the King of the Present, who sits on a throne of clouds, with a robe of air, a crown of vapour and a shadowy sceptre. He in the centre holds an empty dominion over the hours which march from the empire of the Future which lieth in the east. From the realm of futurity, the unknown monarch of ages to come, sends forth the hours one by one, they march before the Lord of the present, and then they vanish into the dominion of the Past. Here in the centre I am fixed, and, lo! my years, like captives

are driven into the regions of the eternity gone by. Methinks I will attempt to soften the heart of the gloomy master of the Past : perchance he may return some hour which he has seized upon. I ask, I beg, I supplicate.—He smiles in derision,—‘ Restore !’ saith he, ‘ Thou fool, I have devoured them ; like Saturn with his sons, I have rent them limb from limb and fattened on them. See here this hour which thou thus vainly wastest is now in mine hands. Each monent of it is my food. See I will feed upon it.’ ”

The past year has been as eventful as many that have gone before it, and with some of these events we have now to do.

We purpose not to give a *resumé* of what has been done, but only to touch on those prominent points which seem to show an onward progress. The task is a pleasant one, and we therefore enter upon it with accordant feelings ; our friends will therefore pardon us, should we happen to become a little prolix or tedious in the performance of our duty. Well do we know—

“ A friend is worth all hazards we can run.
Poor is the friendless master of a world.”

It may be that there are those who blame us for having undertaken the duties of Editors, and think the Journal would have been better in other hands than ours. This we may be willing to concede to them, and have only to offer in extenuation what we stated in our initiatory address, and to which we refer our readers ; coupled with the fact, that we felt the duty had devolved upon us, and we were bounden to make an effort to supply the loss the profession had sustained. Nor do we regret having made the attempt. We have received many encouragements ; while the support we have already obtained is too obvious to need any comment. But with this we are not content. We must still go forward, for we have the same object in view with which we started—the advancement of the best interests of our profession ; and we believe that our Journal may be made the instrument of promoting this, although it may be rather by the acts of others than our own ; for should any think that we arrogate to ourselves any superiority, they know us not ;

and, moreover, uncharitably judge us. We make no pretensions to the claim of perfectibility or infallibility; and, in like manner, we presume not to think that we possess superior intelligence or unlimited knowledge. Yea, we are ready to confess that we feel, at times, our insufficiency; yet we have thought, and still think, that our position and our vocation have given to us some advantages; and these we are desirous of availing ourselves of for the benefit of our professional brethren. We would not have any one "in admiration because of advantage;" and we would fain be "void of offence towards all men." We make no pretension to prescience.

"Man's foresight is only conditionally wise."

But we are fully convinced that there is yet in store a vast amount of matter wherewith to enrich the annals of veterinary medicine.

We ground our assurance, firstly, on what has been already done; and, secondly, on the fact, that many of our friends have not as yet fulfilled their promises; but we know them so well, that we rest satisfied they will do so when the fitting opportunity arrives. Moreover, it may be that there are some who have been waiting to see what the result of the change would be; and they, too, now may give in their adherence. This is what we hope they will do; then shall we become trebly strong, and a threefold cord, we are told, cannot be broken.

It might have been possible that, after a period of seven-and-twenty years had elapsed, a slumbrous spirit had crept over our periodical literature, from sheer exhaustion. That the originality and truthfulness of the recorded cases had ceased to interest; and dulness, instead of energy, had marked the varied contents of our periodical. But we believe that an examination of the past volume will convince our readers that such has not been the case. That equally as interesting and important matter, as heretofore, has crowded its pages, and that a large increase of contributors has been obtained. All this augurs well for the future; for we have resolved not only not to slacken in our efforts to maintain

the position *THE VETERINARIAN* has gained among contemporaneous journals, but to render it even more worthy of the estimation of the professional public generally, and, especially, that section of it for which we more obviously labour.

From the stores of knowledge thus acquired, and the accumulated facts thus brought together in our pages, the profession cannot fail to derive an immense advantage; and it needs no acumen to infer that if this be continued, the augmentation will become a means whereby the thoughtful may derive principles to direct and govern them in their practice, and also possess that from which their intellectual powers may hereafter derive profit.

The diversity of opinions advanced often tend to the elucidation of truth by awakening reflection; whereas, should there be no divarication of thought, the position is often accepted without inquiry, and thus error is sometimes promulgated. Even speculation occasionally has its resulting good; all that is necessary being to keep it within proper bounds, so that it be not allowed to take the place of deduction or inference.

Among the greatest sources whence we have derived encouragement, is the fact, that several standing high in the sister profession have contributed original articles. This is an omen for good, and it cannot but be that countenance thus given will call forth our earnest endeavours to merit its continuance. We rise by such a union, while at the same time those who thus lend their aid show both the liberality of their sentiments and the common ground on which the science of medicine stands; for, cultivate whichever branch we may, those truths will become developed that tend to the establishing of principles by which the alleviation of suffering will be effected, the nature of diseases better understood, and practice ultimately become founded on a true basis.

Was it no cause for gratification, we may ask, that soon after we had assumed our duties, solicitations were received by us from many of our contemporaries, both at home and abroad, to exchange journals? while others of whom we requested the like favour immediately acquiesced,

with one solitary exception. Nay more: does not this show that veterinary literature is held in no slight estimation, and also has its supporters? And does it not behove alike the profession and ourselves so to act as to continue to merit this esteem? We unhesitatingly answer these questions in the affirmative; and we feel satisfied that there will be no withdrawal on the part of our friends, since to them it is we look for materials wherewith to work.

In this country we are, perhaps, a little too prone to boast of our *practical* knowledge. We affect to be utilitarians. Our continental brethren, it must be conceded, are generally more scientific than we are, and it would be well for us to remember that science must ever be the basis of all correct practice, otherwise it becomes mere empiricism.

In the midst of so much generous and unsolicited support, it seems almost invidious to particularize. To all alike our thanks are due; for although the contributions may not have been of equal worth, the spirit that actuated our friends in forwarding them is the same. We are still contented to be probationers on their bounty, and sincerely trust that that which has been so auspiciously begun will eventuate in its perpetuity. Our plans are now sufficiently before our professional brethren. We have no fresh pledges to offer; but we hope to be enabled steadily to pursue our course, and it is for them to assist us in making the Journal worthy both of the profession as a body and the age in which we live.

We trust and we believe that in the performance of our editorial duties we have availed ourselves of every opportunity of rendering the communications, forwarded to us for insertion, both more valuable and interesting to our readers, by the addition of similar facts or cases that have come to our own knowledge, or been recorded by our contemporaries. We consider by so doing we thus concentrate truths hereafter to be referred to with advantage. We cannot for a moment think that any one is so jealous of the originality of his production, as to fear it will be tarnished by bringing forward what another has observed in common with himself, or that the repetition of the occurrence will detract from its value. A multiplicity of facts is sometimes necessary to

establish a principle, while a solitary instance oftentimes proves delusive. Again, something may have been passed unnoticed by one person which another at even first sight recognises, so that "in the multitude of counsellors there is wisdom."

We can hope for progress only in proportion to our usefulness. The principles of our common science ever remain the same. Their development constitutes its growth; and although this may, in some measure, be dependent on the idiosyncrasies or peculiarities of those individuals who devote themselves to this special object, nevertheless there is a still greater cause in operation, namely, the benefit that the profession, as a whole, derive from our work. If there be any doubt of the permanent utility of an art, it will only exist for a time as a novelty;—it will "have its day;"—but if otherwise, it must continue to advance; and as it regards our own, we cannot allow ourselves for a moment to question its importance or value.

It is pleasing, on turning over the pages of the last volume, which are somewhat more in number than antecedent ones, to find an absence of all acrimonious expressions arising from an indulgence in personal controversies. These from the first we had resolved to exclude, and with only one or two exceptions, has our editorial right of exclusion been called for. It is true animadversions have been made, inquiries instituted, censure mildly expressed, corrections suggested, and imperfections deplored; but all this is allowable, and such indeed as ever will be the case, since rarely is it that we see things "eye to eye," while to our own faults we are most commonly blind. Those, then, who give themselves the trouble to advise and correct us, only manifest the interest that they take in our welfare, and prove their desire to co-operate in advancing the common interests of our profession; whilst from the adoption of their proposed alterations good possibly may in the end be derived, for we have already said that we have not attained to perfection, nor do we ever hope to do so; neither are we so wedded to our opinions as to suppose that with us alone is wisdom. But the wise man has said that the beginning of strife is as the letting out of water; and the breach once made, we know not to what an

extent it may become enlarged, as increased impetus is acquired, nor what its consequences may be. It is better, therefore, to prevent its intrusion than to have to restore the broken down embankments, and to repair the mischief it has done. As we have commenced, so it is our determination to continue to act; nevertheless, as we said in our initiatory address, "fair discussion, a just criticism, and a temperate statement when an injury has been done, so as to elicit either an apology or an explanation, or both, are not only admissible but called for, and to these our pages must not be closed."

Should we, in this our retrospect of the past year be charged with a little self gratulation, we almost fear we shall be compelled to plead guilty. We cannot look back on what has been done but with some degree of satisfaction. We knew we had ventured on a bold undertaking. Those who had gone before us we were desirous of emulating. We felt the responsibility of our position, and we were aware that many eyes were on us. Nor were we unconscious of our feeble abilities; but we also knew we were strong in the support of our friends.

In confirmation of this, we have only to refer to the list of our contributors. It is true that we yet miss many names to us "familiar as household words," but these we hope to have the privilege of adding ere long. Even the present number contains communications from many who had not so favoured us before.

Since it has been ours to edit this Journal, how many of our number have departed hence; gone to—

"That undiscovered country,
From whose bourn no traveller returns,
'To tell what's doing on its distant shores."

Our obituary has been large. Alike the old and the young are there: he on whom the snows of the winter of life had long rested, and he with whom spring-time had only just ended. Truly has this world been compared to a charnel-house, and life to a vapour that soon passeth away. Yet we are not called upon to become anchorites, nor to give way to gloomy asceticism. Rather is it our duty cheerfully to per-

form our allotted task; each endeavouring satisfactorily to fill the niche appointed for him; remembering that this is only as the embryo state of our existence—the chrysalis or pupa stage. Soon shall we “shuffle off our mortal coil,” and being perfected, bask in the sunshine of knowledge and of truth; while the disenthralled soul, untrammelled by the things which bound it to earth, will soar to heights of mind-satisfying and transcendant thought, to us unknown in this our present condition. There we shall be for ever learning, and still having much to learn; for who or what can comprehend the infinity of Wisdom? With all our expanded powers of mind, even when the liberty thereof has become complete, it must still be finite; its limitation being its power of comprehension, and this only.

Such an eternal existence lies before us, and to it we are hastening fast as the wheels of time can carry us, although some may heed it not, and others not desire it.

Many of those who are gone before us will be enshrined in our memories, and the poet has beautifully said,—

“To live in hearts we leave behind
Is not to die.”

The good die not: they only change their nature and their place; leaving a transitory state of existence for an enduring one. Do we then,—

“Speak man immortal? All things speak him so.
Much has been urged; and dost thou call for more?
Call; and with endless questions be distressed;
All unresolvable, if Earth is all.”

ON LIFE ASSURANCE.

WE trust it will not be considered by our numerous readers an unworthy mode of making our advent to a new year that, with our hearty congratulations to our friends, and our best wishes for their happiness and success in life, we are led to indulge in some reflections which, notwithstanding that they partake of a more sombre character, will, in the end, be found productive of pleasure of a lasting and permanent character. We allude to the uncertainty of human life, as manifested by our obituary. And while we contem-

plate this inseparable condition of our existence, it will not be without its salutary consequences if we turn our thoughts to the probable position of those whom we should leave behind, in case we ourselves were to become the melancholy examples of that uncertainty, either from accident, which, being hidden in our path, may hourly await us,—or some disease may be lurking within our bodies, utterly without our knowledge or suspicion.

It is no disparagement to our character, as a body, to say, that as a general rule, we are not a money-getting profession ; the very nature of our duties often requiring a great sacrifice of time, and much mental labour, together with the distance which our patients lie from each other, entirely precluding the possibility of most of us making fortunes.

Which of us, while he looks with fond delight upon the prattling boy on his knee, whose jocund laugh welcomes his return home, when he has for hours, perhaps, faced the pelting and pitiless storm ; or while he receives the kind attentions of an interesting daughter, just dawning into beautiful womanhood—which of us, we ask, can, without a pang, look upon these creatures to whom he has been instrumental in giving existence, and whose sole dependence for the comforts, or, perhaps, even the necessities of life, lies upon the result of his exertions, can contemplate the frowns and hardships to which their poverty may, by possibility, and will, in all likelihood, subject them, should he leave them dependent upon the exertions of a woe-stricken wife, whose life has been spent in ministering to his comforts and his wants, upon the cold and easily-exhausted charity of friends and relations ; or the still colder and more sickening rebuffs of the world ?

But our readers will, perhaps, ask us how they are, under such circumstances as the above, to avoid this heartrending contingency ?

We answer, that every member of our profession, whatever his station, or however small his income, has it in his power to lay by some portion of his earnings in such a way as to secure his family from want, should he be suddenly taken from them. And that most excellent and praiseworthy object

is obtained at once by the very easy and simple process of effecting a policy of Life Assurance.

There is, perhaps, no greater proof of the onward progress of the present generation than the rapid spread, and very general adoption, of Life Assurance, which is now reduced to the position of one of the exact sciences.

This mode of making provision for a family has obtained the sanction and recommendation of the greatest modern statesmen and political economists, from among whom we only need cite the opinion of the illustrious Benjamin Franklin, who says, "My object is, to call attention to the fact that, a policy of life insurance is the cheapest and safest mode of making a certain provision for one's family." Thus, in the opinion of this great philosopher and eminently practical man, three most important features distinguish Life Assurance from all other modes of investing money; namely, cheapness, safety, and certainty.

Against the first of these, objections have been frequently urged; many persons believing that, if individuals insuring their lives are fortunate enough to live the natural term of existence, they pay into the office more than their representatives would receive. In the majority of cases this argument is fallacious, and would be so in all, if persons insuring were to do so with profits; that is, by paying a fraction more, and thus sharing the profits of the establishment.

Secondly. Its security has also been impugned, and it has been objected, that many offices are not safe. The best answer to this objection is that, with the exception of a notorious swindling office formerly in existence, no instance has ever been known of the claims of an assurer having been repudiated, unless under decided circumstances of fraud practised by the assured. Moreover, it is a well-ascertained fact, which has been demonstrated to the satisfaction of a Committee of the House of Commons, that, with ordinary prudence and economy in the direction of its affairs, no office can do otherwise than succeed.

Thirdly. As regards the certainty of the provision made through the medium of Life Assurance, a few words will, we trust, convince our readers that this is, *par excellence*, the only

mode a man of moderate means has of making a *certain* provision for his family. For, while all other means are liable to fail at any stage of their progress, this alone acquires a moral certainty so soon as the yearly premium is paid; and let the assurer die at any hour after the periodical completion of his compact with the office, his representatives will receive the amount for which his life has been assured.

Contrast with this the uncertainty of the hoarded savings. These, being always within reach, are continually liable to be either wholly or partially withdrawn on the occurrence of any pressure or sudden emergency; and the regularity of the accumulation is either interrupted or wholly discontinued, and thus the savings of five, ten, or twenty years, perhaps, dissipated in a few weeks. Here, then, we have a reason and an argument why every man, actuated by economy and prudent forethought, should, without loss of time, secure to his family that certain provision at his death, which, alas, he may never during life have had the ability to accomplish by other means. Let him, if he has not begun to set aside a modicum of his hard earnings, pause, and reflect that the daily cigar alone—that noxious and useless luxury,—if laid aside, will procure for his family from £80 to £100, in the shape of a life policy, according to his age. Let him further reflect, that if the morning glass of ale,—which being indulged in he must know is unnecessary to the healthy discharge of his functions,—were abstained from, that it will add another £100 for the sustenance of his offspring and the partner of his toils; when his hand is cold, and his life's-blood moves not; when his eye has become glassy, and the foot can no longer sustain his body. Let him bear in mind, that his having performed this act of mere justice to those whom he loves and esteems, will not in anywise shorten his days, but, on the contrary, the consciousness of having done so has been known to quench the burning fever of a bewildered brain, and to assist in restoring the phrenzied mind to health, and also to sooth the anguish of remorse, and even to make tranquil and happy the bed of death.

With these few introductory remarks we leave our readers, purposing, from time to time, to resume the subject.

ON BREEDING OF ANIMALS.

WE insert this month the first part of a summary by Mr. Assistant-Professor Varnell, of the answers received to the questions on Breeding propounded by him in our last volume, pages 373—375.

We cannot refrain from expressing our conviction that it is a document replete with interest and of great value; and whilst we are free to confess our disappointment at receiving so few communications in reply to the questions; since we feel assured that there are many more of our readers who could, if they would, have enriched the record; nevertheless, much has been obtained, and we have to express our obligations to Messrs. Barker, F. Chamberlain, E. A. Gibbon, T. J. Merrick, W. T. Stanley, and H. R. Stevens, for the readiness with which they answered the inquiries; but we hope that this list will yet be considerably added to.

ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following gentlemen having undergone the necessary examination for the Diploma, were admitted Members of the College, at a meeting of the Court of Examiners, held on December 19th, 1855.

- Mr. F. Mather, London.
- „ C. Lowe, Sandbach.
- „ J. B. C. Hall, Kimbolton.
- „ H. Allnutt, Beaconsfield.
- „ W. Furnivall, Egham.
- „ D. J. Archer, Knightsbridge.
- „ W. Smith, Market Deeping.
- „ W. T. Hearn, Petworth.
- „ H. Pitt, Birmingham.
- „ C. Thimbleby, Spilsby.
- „ W. Bryer, Cheltenham.
- „ D. E. Ratter, Fundenhall.

OBITUARY.

Died, on the 21st November, 1855, of phthisis pulmonalis, Mr. Jonathan Wainwright, of Dublin.

Also, lately, from an accident, Mr. W. Hammond, Witton, near Durham.

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Communications and Cases.

ON PURGATIVES AND CLYSTERS IN THE
TREATMENT OF SPASMODIC COLIC IN THE
HORSE.

By JOSEPH GAMGEE, M.R.C.V.S., London.

AT the time when I entered on my professional career, upwards of thirty years since, oil of turpentine was considered the specific in cases of colic. For aught I know, it is still held in almost as much repute by some, though by many it has been discarded for what is believed to be the more scientific antispasmodic draught, namely, ammonia, in some diluted form, nitric or sulphuric ether, and tincture of opium.

I never followed the practice of prescribing for the relief of a symptom, without attempting the removal of its cause. The irritating contents of the alimentary canal, inducing griping pains, if allowed to remain, must necessarily keep up the morbid condition of the bowels, and if anti-spasmodics exert a hidden influence in some way, they are not in reality salutary, but, at most, methods of momentary relief.

The chief cause of spasmodic colic in the horse was, and often is, supposed to be a drink of cold water, forgetting that this is merely an adjunct to other agencies, such as an improper quantity of deteriorated food, inducing indigestion, constipation, and laying the foundation not only for spasms, but also inflammation of the intestines, and other complications. The anti-spasmodics, therefore, under the circumstances, are as ineffectual and prejudicial in the horse as the Godfrey's cordial in the infant, and the spirituous liquors of the self-prescribing dram-drinker.

Practitioners, over anxious, desirous to effect sudden cures, do not often have the moral courage to try, in these harassing affections, means which if, at first sight, apparently slow, certainly are safe in their operation. I have undeviatingly adhered to one line of practice, without obscuring results. I think it is ever right, in studying the effects of medicines, fairly to test any agent by itself, that it may be rejected or adopted, according to its deserts.

From all the cases recorded in English periodicals, for many years past, taken as a whole, it is clear that veterinary surgeons are often at sea; and, if the cases related do not inspire one exactly with the feeling that the horses treated have been poisoned, they, most undoubtedly, do not appear strong in defence of the treatment adopted. I am alluding, specially, to the effects of diffusible stimulants and repeated *inefficient* doses of purgative medicine, with clysters, rarely, if at all given, certainly not wisely used as they deserve.

Frightened lest by the adoption of energetic measures, simple spasmodic colic should go on to inflammation, purgatives are delayed till all pain has ceased, or, with the anti-spasmodic, oil is prescribed as a bland medicament. Every one is agreed, that oil acts imperfectly, in the horse, as a purgative; it is a very troublesome agent to administer, and, for my part, I think it not so safe, and most decidedly not so effectual, as a good dose of aloes.

Is the fear that a dose of aloes may irritate and excite inflammation well founded? How often is the veterinarian puzzled as to whether it is a simple case of colic he is attending, or if inflammation has set in! Are all these apprehensions well grounded? My son, Mr. Joseph Sampson Gamgee, in a recently published work of his on 'Purgatives after Herniotomy' in man, argues most successfully, in my opinion, for the antiphlogistic and depletive effect of evacuating the bowels. No one will urge that the following sentences do not apply to the horse, or other animal, as they do to man. The sentiments expressed in them are perfectly in accordance with long-matured views of my own, from repeated observation of the effect of purgatives in affections of the bowels in the horse. "M. Dupuytren, on this head, is far too much in accordance with the doctrine of his brilliantly talented but too speculative contemporary, M. Broussais, to deserve much attention," says my son, referring to the illustrious Baron's prejudices against purgatives. "M. Velpeau thus comments upon Dupuytren's teaching in this matter. 'At first sight, one is struck by the weight of his reasoning, though at bottom it be easy of refutation. In point of fact,

the matters accumulated in the intestine are a powerful cause of inflammation. Now the best means of extinguishing, or of preventing, the inflammation, is to expel the *fæces*.'”* Further on, my son quotes Mr. Lawrence, who, in his treatise on Hernia, says, referring to purgatives after herniotomy, “remembering that the intestines frequently contain a large collection of *fæcal* matter, and of morbid secretions, which can only be got rid of by several copious motions, and that the operation of purgatives must be salutary, not merely by removing this noxious accumulation, but by exciting a discharge of fluids calculated to lessen inflammatory action. The notion that purgatives are capable of exciting the mucous membrane of the alimentary passages, and thus of producing or aggravating inflammations of the stomach or bowels, and the prohibition of their employment on this account, both after the operation for strangulated hernia, and in many other cases, is, in my opinion, entirely groundless; and the practical precepts founded upon this theoretical and imaginary foundation, have always appeared to me a signal triumph of doctrine over the most unequivocal results of experience, and the plainest dictates of common sense.”†

The administration of aloes in efficient doses, in cases of colic, has long been in use, to my knowledge, in Naples; and when, in 1826, I was there, I found that as much as two ounces of Socotrine Aloes, made into an electuary with syrup, were prescribed for a dose, given by smearing the mixture on the horse's tongue, and washing it down with warm chamomile decoction. The electuary was thus in part swallowed and in part lost. Clysters formed a constant, and were considered a very necessary, auxiliary in the treatment. Tutored in the practices of the London school, I was then surprised to hear of the amount of success, especially as no cases of superpurgation from the large doses of aloes prescribed were ever spoken of; from which I concluded that, by the mode of administering the aloes, only an indefinite amount was actually swallowed. But a short time elapsed before I scrutinisingly tested the practice, and became confirmed in its superiority. Aloes and clysters have ever since been the only expedients I have resorted to, and I am thoroughly convinced that veterinary surgeons called on to attend patients labouring under spasms, would do better, be far

* ‘Nouveaux Elémens de Médecine Opératoire,’ tom. ii, p. 299. (See my son's Pamphlet, p. 35.)

† ‘Treatise on Rupture,’ 5th edit. p. 322.

less likely to err, by going provided with a good physic ball and clystering syringe or tube, rather than carrying bottles containing nauseous and irritating drinks—stimulating draughts calculated temporarily to overcome pain, but often to lay the foundation for more acute complaints and serious organic lesions.

If in cases of colic aloes are prescribed, by some practitioners, drachms of opium are not forgotten, the former, in consequence cannot act, the latter throw the patient into a state of stupor, blunt that pain which indicates the disorder, and tend not to the relief of the over-distended and morbidly excited intestine. Aloes are repeated, the double dose of purgative gains the ascendancy, the peristaltic action, considerably disturbed, is the cause of invagination, or, if the gut remains free, inflammation or violent superpurgation ensue. In the former case, bleeding is had recourse to, which the animal, nauseated and half poisoned, can ill support; in the latter instance, chalk and opium, aromatic confection and astringent enemata, so complicate the whole method of treatment, as so to disturb the organs they are intended to act upon, that in one way or another death is too often the result. I have not drawn an imaginary picture. Recorded cases are the bases of my criticism; and I forbear analysing any special ones, as almost the whole seem to have found their way into print by mistake; surely not as data to judge of the wisdom of the recorders.

I shall for this month drop the subject here, to resume it shortly. The above is one division, and the next will refer to the operation of purgatives, after which, in conclusion, cases shall be published, which are the basis of all I have said; and having fairly exposed my views, shall leave to others to form their own independent opinion.

16, UPPER WOBURN PLACE.

CASES OF FRACTURE OF THE PUBIS.

By JAS. WESTERN, M.R.C.V.S., Horse Artillery, Bangalore.

ON the 19th of June, 1854, I was called suddenly to my hospital to see a reported case of colic, when I found that a black horse, an Australian, belonging to the C Troop, Horse Artillery, had just been admitted. The farrier-major's report was that the animal was attacked at his pickets, and had

thrown himself down with violence, and that he thought he had hurt himself, as he walked to the hospital lame of one hind leg. The horse was lying on his side, stretched out, heaving laboriously, and groaning with pain. The extremities were cold, and the pulse scarcely perceptible. From the general symptoms, I suspected that a rupture of the liver or diaphragm, accompanied with internal hemorrhage, had taken place. I, however, resolved to give trial to a bloodletting, but, before a quart of blood had been lost, a cold perspiration broke out all over the body, the pulse at the submaxillary artery became totally indistinct, and although the bleeding was stopped immediately, he died within a few minutes.

The *post-mortem* examination showed a fracture of the symphysis pubis and ilium. The bladder was also torn in shreds by the broken ends of the bones, and the pelvis was full of blood.

I learnt afterwards that the horse was exceedingly timid at his pickets, and frequently in the habit of running back and throwing himself down. Such doubtless had been the case in the present instance, and the fracture was the consequence. The picket lines of the troop are about two or three hundred yards from the hospital lines; the laceration of the bladder, therefore, is not surprising; but how he walked so far with such extensive fractures, appears almost miraculous.

CASE 2.—In July last, I was sent for about midday by Capt. Beresford, A.D.C. to the General commanding the Mysore Division, to see a horse under his charge, the property of his Excellency the Commander-in-Chief, said to be suffering from colic.

On my reaching the stable, I found the horse stretched at full length on his side, breathing laboriously. The pulse at the jaw was imperceptible, a cold and profuse sweat bedewed the body, the legs were icy cold, and so also was the breath. In short, the animal was dying from internal hemorrhage, and did not live more than five minutes after my arrival.

Post-mortem.—On opening the abdomen it was found filled with blood from a laceration of the large vessels of the pubis; the bones being, as in the former instance, fractured.

The history of the case is this. The horse was sent to a farrier in the neighbourhood to be shod; something alarmed him, and he snatched his foot from the man's hands, and ran backwards, till he came to the full extent of his heel ropes, when a sudden check being given to his retrograde movement, he threw himself violently on his haunches, and in endeavouring

to rise, fell forwards upon his head. He lay for a few minutes evidently stunned by the blow, and then sprang upon his feet, but with a staggering effort. As he now showed symptoms of great pain, he was sent home, and walked a similar distance to the other horse. Immediately he reached the stable, he lay down, and my attendance was requested.

These are the only cases of fracture of the pelvis I have ever met with, and as such I send them for insertion in your Journal, with best wishes for its success.

IMPACTION OF INGESTA IN THE ILEUM OF A HORSE. DEATH.

By H. W. SPARROW, M.R.C.V.S., Ware.

A BAY cart-horse, aged, the property of Mr. Davey, of Blakesware was found early on the morning of the 28th of November, by the head ploughman, rolling about in the stable, in great pain. He had eaten his night's feed, and was remarked as being particularly lively during the preceding day. Within the last six months this horse had been twice under my care for severe attacks of spasm of the bowels, both of which were attended with obstinate constipation. In the first attack, fifty-four hours passed before any action of the bowels took place; in the second, thirty-four hours; during the whole of which time he suffered much pain. On the present occasion, an anti-spasmodic draught was given by his owner, and as this failed to afford any relief, it was repeated two hours afterwards. He was also bled to the amount of six quarts.

10 a.m.—Not being any better, I was now requested to see him. I found him suffering much abdominal pain, with, however, occasional intervals of ease. The pulse was but slightly affected; the extremities were moderately warm; the visible mucous membranes a little injected; but the breathing was nearly natural. The abdomen was enlarged, and a slight perspiration bedewed the skin. Considering it to be a renewal of his old complaint, I administered a purgative draught composed of—

Sol. Aloës, ℥vj;
Ol. Lini, ℥xij;

I also threw up an enema, and ordered it to be repeated every two hours. Besides this, I gave instructions for his

general management, and directed that he should take, every four hours,—

Carb. Ammon., ℥ij;
Eth. Tinct. Belladonna,
Spt. Nitric. Ether., āā ℥j;
Aquæ, ℥viii.

On repeating my visit early next morning, I found that he had died during the night. The attendant informed me that he appeared, after the application of the remedial measures, to get better, as he lay quiet for some hours; but towards the evening got up and stood till about eight o'clock, when he fell, and died almost without a struggle. From this description I concluded that mortification had taken place; but, on opening him, which I did immediately, I was somewhat surprised to see the small amount of discoloration of the abdominal viscera which existed. The mesentery was congested, but the whole of the intestinal canal was nearly of a normal colour throughout. On an inspection of the small intestines, the ileum, at its termination in the cæcum, was found to be filled to distension with closely packed and dry ingesta. The contents of the large bowels were semifluid, but the stomach was filled to repletion with unmasticated chaff and oats, the weight of its contents being forty-eight pounds.

I do not consider this an unusual case, but as being one of those annoying cases where death occurs sooner than the symptoms would lead us to suppose. It is instructive in as far as we learn that a fatal result may attend inpaction of food in the *small* intestines without a *post-mortem* examination revealing, as might be supposed, a large amount of inflammation or the existence of mortification.

We may conclude that even had the stomach been relieved of its contents, by the use of the stomach-pump, little good would have been done, for we should have had a more powerful enemy to contend with in the over-distended small intestine.

CANCER OF THE ORBIT AND CONTIGUOUS PARTS IN A COW.

By ROBERT COOK, M.R.C.V.S., Erith.

I BEG to forward for your inspection part of the head of a cow, the orbit of which is, as you will perceive, affected with a fungoid growth. I am able to give you but a very brief account of the progress of the case as the animal was not

long under my care, and as her owner did not like her to mingle with his other cows, he sent her some distance from home, where I seldom had an opportunity of seeing her. The disease was first observed about six months since, at which time there was a vascular-looking excrescence protruding beneath the *membrana nictitans*, which organ, in the course of time, from the rapid growth of the diseased structure, became displaced and lost to view. Both cauterization and excision were had recourse to, but failed to arrest the disease. In a short period it had spread to other parts in the immediate neighbourhood, and involved also the eyeball, and which, I was informed, ultimately sloughed out. The constitution did not appear to be affected until lately, and it is worthy of remark that during the progress of the disease she produced and reared a fine healthy calf.

I am induced to send you the morbid parts with the hope of your making some remarks on the nature of the disease in the next number of the *Veterinarian*.

[The specimen presented *externally* a very singular and even unsightly appearance, not only from the existence of the fungoid growths, but also from the sloughing condition of the eyelids and all the contiguous structures. The fungoid or morbid growths, which sprang from the integument, extended from the median line of the face to about half way down the cheek on the right side. They entirely concealed from view the orbital opening, and on drawing them aside the site of the eye-ball was found to be occupied by a similar diseased mass, the organ itself being entirely destroyed. The integumental tumours were circular in outline, and closely compacted, having here and there between them small portions of healthy-looking skin. They varied considerably in size, the largest being about two inches in diameter; but the centres of several had sloughed, which gave to these growths a cup-like form.

The section of the more perfect ones exhibited on their surfaces a white substance, which was dense, and arranged in the manner of laminæ, vertically placed. Beneath this, and making up the chief bulk of the mass, was a pulpy substance of a yellowish colour, which extended inwards, united with the bases of other tumours, and occupied the place of the bones; and which were so completely changed as not to be recognised as osseous structures, they being easily cut through, as an entire removal of their earthy materials had been effected. To the naked eye, the appearances of this part of the diseased mass did not essentially differ from the sub-integumental portion.

The small portion of the face which was sent, and the rude way it had been detached by the knacker, prevented the dissection being so fully carried out as could have been wished; enough, however, was seen to warrant the opinion that the case was one of true cancer.]

ON DISEASE OF THE SESAMOID BONES OF THE HORSE.

By JOHN ROALFE COX, M.R.C.V.S., London.

THE attention of the profession having been directed by Mr. James Turner to the lameness of horses arising from disease of the sesamoid bones, I have thought that a well-marked case of the kind would be acceptable to the readers of the *Veterinarian*: and, being acquainted with its history, I have had equal pleasure in presenting the morbid specimen to the Museum of the Royal College of Veterinary Surgeons, in Red Lion Square.

In June of last year, eighteen months, as will be seen, prior to his death, the horse was submitted to me for an opinion of his lameness, and of the treatment best to be adopted. He was an aged hunter, and had been in the possession of the same gentleman for, I believe, several years. He was also used in town during the summer months as a hack.

On reference to my journal, I find, the following report, which I give verbatim: "June 28th, 1854. Chesnut horse lame in both fore legs, *particularly* the off, from jarred and swollen condition of the fetlock joints. Advised cold applications preparatory to more active measures."

At this time I did not consider that either acute inflammation of the joint or recent lesion existed, but that the enlargement I noticed depended on a more gradual alteration of the structures as an effect of wear and tear. Agreeably to my instructions, the horse had wet bandages applied to his legs while in the stable, and as he got somewhat better of his lameness he was taken into the country, with the remainder of the stud, without any other treatment being adopted. In consequence of this, I lost sight of him until last spring, between eight and nine months prior to his death, when he was again sent to me for advice on his lameness. A copy of the entry of the examination I will also give, inasmuch as I did not at the time remember the circumstance of the horse having been sent to me before; but a few days subsequently,

upon being reminded thereof, I recognised the case, and referred to my minute of the preceding year.

“March 5th, 1855. Chesnut horse lame of both fore legs, *most so of the off*, from enlargement and disease of the fetlock joints.”

Cold applications were again advised, but no other treatment was adopted, as I considered “blistering” would do little or no good: I was also unwilling to hold out too sanguine hope of success from “*firing*.” The horse in the course of time again returned to the country establishment of his owner; and the next I heard of the case was during the past month, December, when the gentleman called to tell me that he had had the horse destroyed, and wished me to examine the legs, to ascertain whether the lameness would have admitted of cure. He stated that he became *worse* when allowed to rest, and far too lame to be continued at his work.

I wish to remark, that the enlargement of the fetlocks, alluded to in the reports of my examinations, was lateral and involved both the inner and outer side of each joint, being most marked on *the outside of the off leg*, and that there was also interstitial thickening extending about a couple of inches upwards between the suspensory ligament and cannon-bone.

On dissection, a general enlargement of the lateral ligaments was observed, with disease of each *outer* sesamoid bone, the only difference in the corresponding joints being that the off leg was more extensively affected, and accordingly I selected it for presentation to the College. Exostosis existed on the outer surface, and absorption of nearly the whole of the articular cartilage. The denuded bone was discoloured, and shewed the effects of attrition in furrowed indentations. The corresponding portion of the condyle of the metacarpal bone was in precisely the same condition.

HYPERTROPHY, WITH CONTRACTION, OF THE LEFT VENTRICLE OF THE HEART, COMBINED WITH HYPERTROPHY OF THE DIAPHRAGM, AND INTERNAL MELANOSIS.

By R. H. N. HOLLOWAY, M.R.C.V.S., 2d Madras L. C.

ON the evening of the 16th of September, 1855, my attention was directed to a *white* horse belonging to the

Horse Artillery at this station, which had been admitted into the sick lines, and was supposed by the farrier to be suffering from an attack of gripes.

The symptoms were indeed more like those of an ordinary case of spasmodic colic than of any other complaint. When first I saw the horse, he was standing quietly, being then apparently free from pain; his breathing was tranquil, and the pulse regular, but oppressed. The mucous membrane of his mouth and nose was of a healthy colour, eyes bright, and possessing a quiet and calm expression. The skin and extremities were also comfortably warm. I was informed that he had had some remission of pain before my arrival; and that he had been standing still since the administration of a draught containing P. Zingiber, 3v; the emptying of the rectum, and exhibition of a copious enema of soap and hot water.

I watched him attentively, and soon found that the symptoms threatened a relapse.

After showing signs of abdominal pain, by crouching, shifting his hind legs, and advancing them under his belly with a view to relax the muscles, he lay down with a grunt, and instantly began rolling violently from one side to the other; and that, after vainly endeavouring to obtain some relief by assuming various positions, he suddenly rose, maddened as it were by the pain. He was no sooner up, than he became as restless as before, gave a hearty shake as if to throw off the malady, crouched, gathered his hind legs under him, and bending his knees, fell down as before, to enact the same scene over again. This having taken place two or three times in quick succession, an attempt was made (but a fruitless one) to draw blood from the left jugular vein. A good bold opening was then made into the opposite vein, but that only yielded an unusually dark and thick, and small stream of blood, which congealed as quickly as drawn. A dose of carbonate of soda was given, and subsequently the following draught:—

R Spt. Æther. Nit., fʒij;
P. Opii, ʒj;
Aloës Sol., fʒvj;
Aquæ tep., fʒx. M.

The horse now appearing more easy, I left for my own lines, after giving directions for the general management of the animal throughout the night, to the senior farrier in attendance.

On the following morning early, I revisited my patient, and found him lying down, evidently in a hopeless state. His skin was bathed in a cold sweat, ears and extremi-

very cold, pulse scarcely perceptible, lips pendulous, countenance extremely haggard and desponding, but the breathing not much disturbed. He died in the course of a very few hours after my visit.

From the state of the blood, as well as from the fact of the horse having been the subject of melanotic tumours for some years in the coccygeal region, although they apparently did not in any way inconvenience him by their presence, I felt confident that the post-mortem examination would reveal similar deposits situated internally, and in this instance "coming events cast their shadows before them," for they were discovered of various sizes in the abdominal cavity, implicating the mesentery, and mesenteric glands, liver, spleen, and kidneys. In the pelvic cavity also, there was a large tumour. Upon cutting into one, it presented a brownish black appearance, and communicated a brown stain to the fingers. Upon the removal of the viscera from the abdominal cavity, a bunch, as it were, of these pigmentous deposits was found. Each tumour being about the size of a nutmeg, surrounding, and closely adhering to the posterior vena cava, and posterior aorta, in their course along the spine, contracting the diameter of the former to about that of an ordinary-sized goosequill, the latter being also rendered all but impervious at one particular spot. Venous congestion was exhibited almost throughout the whole of the viscera. The diaphragm also was remarkably thickened in its muscular walls. It was carefully removed, and the lungs and heart next examined. The former were quite healthy, and of their normal pale-pink hue; the heart, however, was enlarged, and upon making a longitudinal section through the wall of the left ventricle, it was found to be just double its natural thickness, and the cavity so nearly obliterated as only just to admit the end of one's finger.

The thickening was confined to the muscular tissue of the organ, and had not extended beyond the left ventricle. The blood in the right auricle was, as might have been anticipated from the venous congestion existing throughout the system, much darker than it is commonly found under other circumstances.

The substance of the walls of the heart gave no indication of inflammation, and the pericardium also appeared to be healthy.

The intestines were inflamed throughout. The stomach was very much distended with undigested "chenna"* and the

* The grain used in this part of India for feeding horses, it somewhat resembles our English pea.

mucous coat highly inflamed. The horse had eaten his usual allowance of grain and grass, and drank freely of water upon the morning of the attack, and also at midday; and it was not until after his evening's feed that he was observed to be unwell. He joined the troop on the 15th March, 1847, and was then registered as 6 years old.

Are the melanotic tumours to be viewed as the remote, and the contraction of the vena cava and aorta as the proximate, cause of the disease of the heart, in the present instance?

I should mention, perhaps, that the structure of the blood-vessels did not seem to be impaired, nor had any other portion of the circulatory system, besides that to which I have already alluded, any appearance of disease.

CASE OF VENTRAL HERNIA IN A PONY. OPERATION. RECOVERY.

By W. B. TAYLOR, M.R.C.V.S., South Anston.

HAVING of late seen several successful cases of penetrating abdominal wounds recorded in the *Veterinarian*, I have sent you the particulars of one that occurred in my practice, and which will tend to confirm Mr. Kettle's statements respecting the little danger which occasionally attends wounds of this description.

The subject was a brown mare pony, fourteen hands high, and about 18 years old, the property of — Atkinson, Esq., Atercliff. As she was a great favorite, she was sent to Anston for a run at grass, and on being turned out on the morning of the 10th August, 1854, was driven by another pony over a newly made fence, when the injury was inflicted. She was forthwith taken to a stable, and my attendance requested. On examination, I found a large hernial tumour about the size of a man's head, situated near to the umbilicus, and a little on left side of the abdomen. A wound also of the common integuments existed about two inches long; through which the intestine could be distinctly seen. Notwithstanding this state of things, few symptoms of pain were present.

On account of a messenger having to be despatched to the owner, an operation for the reduction of the hernia was deferred till 4 p.m., when I found, on repeating my visit, the patient giving evidence of abdominal pain by pawing occasionally. The pulse also was 60, and full to the feel. In

now proceeding to operate I had the animal cast in the usual manner, after which the head was secured to a post in front, and the near hind extremity freed from the hobbles and confined to another post behind. Bags of straw were also used to place the pony in a favorable position.

All being properly arranged, a sponge saturated with chloroform was applied to each nostril; the breathing soon became stertorous, and in about eight minutes, the animal was completely under the anæsthetic influence of the agent. On a careful manipulation, I found it impossible to reduce the hernia without enlarging the external opening, and which was accordingly done to an extent sufficient to admit the introduction of the hand; when I ascertained that the serous coat of the intestine, in the part which had lodged against the wound, was much discoloured and slightly abraded: the integrity, however, of the other coats was preserved. The intestines being grasped by the hand, as introduced into the abdominal cavity, were carefully returned. The rent in the peritoneum, which was thus fully exposed, was found to be about ten inches long, and in a line with the external wound. I now brought the edges of the *internal* wound—peritoneum and abdominal muscles—together, and secured them by a strong, *uninterrupted* suture of thread, allowing the end of it to protrude through the external opening. The edges of the outer wound—integument—were kept in apposition by interrupted sutures. Before allowing the animal to rise, further security against the escape of the intestines was given by the application of a truss attached to a surcingle.

In about half an hour afterwards the following symptoms were present. Pawing continually. Frequent looking to the flanks. Pulse 72, and hard, and respiration increased. The extremities, however, were of a natural temperature. I gave

Sol. Aloës, ʒiv, et Tinct. Opii, ʒj,

in gruel. I also abstracted six pounds of blood, threw up an enema, and ordered the general comforts of the animal to be attended to.

11th.—My patient is much better than I expected: there are no indications of pain present; the breathing is tranquil, and the pulse 60. Fæces have been passed, and she has eaten a mash, and drunk some gruel. Instructions were again given for her to be kept perfectly quiet, and fed sparingly on bran mashes and green clover.

12th.—Still free from pain. Pulse lower, about 56. Eats and drinks freely. Considerable swelling, which pits on pressure, is present around the parts operated upon, but the

wound looks healthy. The pressure of the truss was lessened, and Tinct. Myrrh. Co. applied to the wound to favour the suppurative action.

13th.—There is but little alteration in the state of the animal to-day, except that the swelling has extended from the mamma to the sternum, and the fæces are rather hard. I dressed the wound as before, and gave in ball:

Aloës Barb.,
P. Resin Flav., āā ʒij;
Hydr. Chlorid., gr. v.

14th.—The medicine has had the desired effect, and all is progressing favorably.

In a few days the swelling began to subside, when on taking off the truss, I found a free discharge of pus from the wound, but which was somewhat offensive. I therefore dressed the parts with Sol. Calcis Chlorin. Besides this purulent discharge, several small abscesses, about the size of walnuts, had formed in the immediate vicinity, which were freely opened and dressed with a digestive, when I again applied the truss, but in such a manner that the discharge could readily escape. In addition to the bran mashes and green feed, half a peck of oats per day was now allowed. Several smaller abscesses subsequently formed, which were treated in a similar manner to the others. On the 22d, the use of the truss was discontinued, after which the orifices left by the evacuated pus were soon filled up by granulation. The suture passed through the abdominal muscles came gradually away; the other sutures were detached on the twenty-first day succeeding the operation; and in about ten days more the animal was perfectly recovered.

It is worthy of note that the pony never moved during the operation, except when the last two sutures were passed through the skin, and then slight twitches only were observed. I also experienced little or no difficulty in preventing the escape of the intestines, having no violent contraction of the abdominal muscles to contend against, which doubtless is to be attributed to the effects of the chloroform.

CASES OF PROLAPSUS ANI.

By A. J. OWLES, V.S., Carabineers.

SCUTARI BARRACKS; *December 29th*, 1855.

GENTLEMEN,—A precedent will often induce young practitioners to act with more confidence in rare and doubtful cases than they otherwise would do ; and, probably, had it not been for a case published some time ago by the late Mr. Dycer, of Dublin, I should have hesitated before operating with the knife for “Prolapsus Ani.” As all may not have seen cases such as these, I send a very short account of two ; one of which was successfully treated by excising the protruding portion of the gut ; and if you consider them to be sufficiently interesting for the readers of the *Veterinarian*, they are very much at your service. I may as well inform you that we had a great number of cases of intestinal irritation, while at Eupatoria, caused by the horses swallowing a large quantity of sand ; and to this cause I attribute the straining which led to the prolapsus.

I am,
Yours obediently.

To the Editors of the ‘Veterinarian.’

CASE I.—PROLAPSUS ANI.

November 14th, 1855.—Early this morning, the subject of the above affection, a brown gelding, 8 years old, was discovered with a portion of the rectum inverted, and projecting from the anus to a considerable extent. He strained occasionally, but in the intervals appeared to be tolerably free from pain. The inverted gut was swollen, and also hard and cold to the feel. It was likewise torn slightly in two places. I despaired of being able to reduce the hernia with a fair probability of any good resulting, both from the condition of the protruding viscus, and from the great irritability of the intestines which was present, caused by the existence of sand within them. I, however, made the attempt, having been advised so to do. The intestine was first scarified slightly, to relieve the congested vessels, and afterwards fomented continuously for nearly three hours. By these means, both the swelling and hardness were somewhat relieved, but when the least effort was made to return the gut, the horse groaned with pain, and strained violently against our attempts. Finding it useless to persevere in these

attempts to return the intestine to its natural position, I at once had recourse to the knife, and removed the projecting portion of the gut:—I first cut through the mucous membrane close to the anus, and then carefully dissected the submucous tissue, and which, by-the-bye, was loaded with sanguineous fluid. In doing this, some small vessels were divided, but which proved of no importance in the progress of the operation. Having cut down upon the mucous coat on the inner side of the gut, I dissected the connecting tissue away from it, so that as little of the membrane was removed as possible. After excising the whole, the small portion of the mucous coat which had been left, and which was originally inverted, was quickly retracted, so that nothing could be seen externally. The horse soon appeared quite easy, and having a disposition to take food, was supplied with a bran mash. I ordered a mild laxative in combination with Tinct. Opii; and gave instructions for the animal to be kept as comfortable as he could possibly be under the unfortunate circumstances he was placed in; namely, out in the open air exposed to a piercing cold, north-east wind. On the next day he appeared free from pain, fed very well, and voided the fæces without difficulty. From this time he continued to do well; in fact, he never appeared to suffer from the operation, and was fit to return to his duty on the 6th of December.

CASE II.—PARTIAL PROLAPSUS ANI.

November 22d.—A brown gelding, 7 years old, was admitted in the early part of the day with abdominal pains, brought on by sand in the intestines. The exhibition of clysters, and hand-rubbing of the abdomen, seemed to relieve him, and by noon he appeared to be quite free from pain.

23d.—About six this morning, he was observed to be straining violently, and twice during these expulsive efforts, a portion of the rectum was forced out, the mucous coat of which was greatly congested and thickened. A man was set to watch him, with a view to prevent his forcing out the intestine, until a pad could be arranged to press on the anus; but after its application, it was even then found necessary to keep a man constantly with him. Tinct. Opii, ʒiiss, was given, and for a time he seemed easier. The pad was removed occasionally, when he generally voided some fæces, and which were found to contain a quantity of sand. At 10 a.m. I gave a laxative, and ordered a mash diet. He remained much easier till about 5 p.m., when he commenced straining again very violently; and during the short time the pad was off, to allow the fæces to pass, he again forced out the gut,

the mucous coat of which was now even more congested than in the morning. The inversion increased the pain; seeing which, I administered a second dose of opium, and had a solution of alum applied to the congested mucous membrane, by injecting it very gently into the anus. This was done with the view of contracting the vessels, &c., of the part, and lessening the local irritation, and for some hours after it was used the straining was nearly discontinued. About two o'clock the next morning the straining again returned, and the horse was otherwise very uneasy, and the same tendency for the intestine to protrude existed as at first. This state of things continued, with little alteration, till about 9 a.m., when I injected into the rectum a weak solution of sulphate of copper, in the same way, and with the same view as I had used the alum on the previous evening. This had an immediate beneficial effect, for the irritation was relieved at once, and continued to be less all day. The use of the pad was continued, and in the evening the injection was repeated. I allowed the compress to remain on till the next morning, by which time, the straining had quite ceased. Some slight irritation of the part remained for a few days, but from this he gradually recovered, and returned to duty on the 5th of December.

ON STRYCHNIA.

By J. FIELD, Student of Medicine, London.

AT the present time, when strychnia has acquired so unenviable a notoriety, it may interest some of your readers to peruse a few remarks on the subject.

It is an alkaline substance, and was discovered in the year 1818, by Pelletier and Caventou, in the fruit of the *strychnos nux vomica*, a moderate-sized tree, indigenous to the islands of the Indian Archipelago, the coast of Coromandel, Cochin China, and several other parts of the East Indies, where it is known by the name of Caniram. Its fruit is ovoid in form, of an orange colour, pulpy, about the size of a small apple, and contains many seeds: it is from these seeds that strychnia is procured, in the proportion of thirty-four grains to the pound.

The mode of preparing strychnia is given in the 'London Pharmacopœia.'

Strychnia, as met with in commerce, is usually in the form of a greyish-white granular powder; it is odourless, but

has an intensely bitter taste. According to Liebig, 100 parts of strychnia are composed of—

Carbon	76.43
Nitrogen	5.81
Hydrogen	6.70
Oxygen	11.06
	<hr/>
	100.00

Its equivalent is 234, and its symbol $C^{30}H^{16}N^3O^3$.

The adulterations to which strychnia is liable are colouring matter and common salt.

In small doses it acts as a tonic, but in larger ones as a special stimulant on the medulla oblongata and spinal marrow, without affecting the sensorium. When given in small quantities as a tonic, it produces an increased energy in the digestive powers. Its most remarkable effects are, however, on the nerves of motion, and are indicated by spasmodic twitchings of the voluntary muscles, which, as the dose is increased, amount to violent tetanic spasms.

When dogs swallow nux vomica in large doses, they are quickly attacked with all the symptoms of tetanus:—distortion of the limbs, tremor, convulsive movements of the face and eyelids, immobility of the eyes, and a complete rigidity of all the muscles of the body; which symptoms are much increased by exciting the animal, but there is no delirium; showing that the brain is in no way affected. Many other animals, as cats, rats, foxes, &c., are similarly affected; but some animals, as hogs and goats, eat it with impunity. Its influence on the nerves of sensation is remarkably exemplified in reptiles.

M. Dupuy, having divided the eighth pair of nerves, in a horse, gave the animal two ounces of nux vomica, in the form of a ball, without any effect; he gave the like dose to another horse, which died in a few hours, with violent tetanic symptoms. From this, it appears to act solely through the intestinal nerves, and not, as Magendie states, by absorption, and being conveyed by the blood to the spinal cord.

Applied to wounds, strychnia produces tetanic symptoms; but no convulsions follow its application to the sound skin.

The action of strychnia and the extract of nux vomica differ in one respect, which is not easily explained. Extract of nux vomica determines the blood powerfully to the head, while it is very rare that pure strychnine and its salts produce any effect on the cerebral circulation.

Professor Simonds and Mr. E. Braby have employed

strychnine with success in cases of paralysis in the horse. Mr. Youatt recommends it for chorea in the dog. Its action, however, is very powerful, and its use calls for much caution. A solution of its salts may be applied to paralysed parts with benefit.

The dose for a horse is from gr. j to gr. iij, twice a day, combined with vegetable tonics.

That for the dog, from $\frac{1}{8}$ th to $\frac{1}{6}$ th and $\frac{1}{4}$ th of a grain. The fatal consequences of this drug appears to proceed from exhausted action of the heart, and asphyxia. Post-mortem examinations display scarcely any trace of inflammation, even in the stomach, but the venous system is always found gorged with blood, while the arterial is nearly empty.

We have no *certain* antidote. In case of an overdose of strychnia having been given, emetics may be used in the dog to remove the poison, after which tincture of iodine should be administered, as this forms with strychnia, out of the body, an inert compound. This antidote, if such it be, was discovered by Dr. Donné.

The bean of St. Ignatius, the wourali poison, and the upas tiente, owe their poisonous properties to strychnia.

The quantity required to destroy life in man is very small. The smallest fatal dose was that in the case of Dr. Warner, who died from the effects of half a grain of sulphate of strychnia in fourteen minutes after its exhibition. On the other hand, a person has been known to recover from a dose of seven grains.

In 1837 or 1838 an action was brought against an insurance company to recover the amount of a policy on the life of a young lady who had died under suspicious circumstances soon after several insurances had been effected by the plaintiff. The plaintiff did not recover their amounts, and ultimately fled the country. He is supposed to have administered strychnia to her in porter.

The following *physiological* test for this poison is from the *Lancet*.

NOTES ON THE DETECTION OF STRYCHNIA.

By MARSHALL HALL, M.D.

“The detection of strychnia as a poison is at this moment of deep public interest; when chemical tests fail there remains another, the physiological.

“Having long studied the effects of strychnia on the animal economy, I am persuaded that these effects on the

most excitable of the animal species are at once the most delicate and specific tests of this poison.

“I have just performed two experiments, and only two, for want of materials for more.

“I requested Mr. Lloyd Bullock, of Hanover Street, to dissolve one part of the acetate of strychnia in 1000 parts of distilled water, adding a drop or two of acetic acid.

“I then took a frog, and having added to one ounce of water $\frac{1}{100}$ th part of a grain of the acetate of strychnia, I placed the frog in this dilute solution. No effect having been produced, $\frac{1}{100}$ th part of a grain of the acetate was carefully added. This having produced no effect, in another hour $\frac{1}{100}$ th part of a grain of the acetate was again added, making about the thirty-third part of a grain; in a few moments the frog became violently tetanic, and, though taken out and washed, died in the course of the night.

“I thus detected, in the most indubitable manner, the thirty-third of a grain of the acetate of strychnia. It appeared to me, that had more time been given, a much minuter quantity would be detected.

“I placed the second frog in one ounce of distilled water, to which I had added the $\frac{1}{200}$ th part of a grain of the acetate of strychnia; at the end of the first, second, and third hours, other similar additions were made, no symptoms of strychnine having appeared. At the end of the fifth hour, the frog having been exposed to the $\frac{1}{50}$ th part of a grain, tetanic symptoms came on, and, under the same circumstances of the removal and washing, the frog died.

“I thus detected $\frac{1}{50}$ th part of a grain of the poisonous salt by phenomena too vivid to admit of a single doubt; the animal on the slightest touch being seized with the most rigid spasms.

“In cases of suspected poisoning by strychnia, the contents of the stomach and intestines, of the head and blood-vessels, must be severally and carefully evaporated and made to act on frogs.

“P. S.—In two subsequent experiments, the $\frac{1}{500}$ th and the $\frac{1}{1000}$ th part of a grain of the acetate of strychnia was detected.”

OXFORD STREET; *Jan.* 1, 1856.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,
Lecturer on Veterinary Medicine and Surgery, London.

(Continued from p. 51.)

ON THE RELATIVE THICKNESS OF THE WALLS OF THE HOOFS OF FORE AND HIND FEET IN THE HORSE, CONSIDERED IN RELATION TO SHOEING.—It is generally accepted, says my friend, Mr. Meyer, that the difference between the horny wall of a fore and hind foot is, that in the former the toe is strongest and the heels weakest, whereas the reverse holds good with hind feet, in which the toe is held to be the weakest part. Meyer finds that the toe is always the thickest part of the horny box; it is half a line or a little more, thicker in the fore feet than in the hind. The heels of the fore feet are a quarter to half a line thinner than those of the hind. If in the fore hoofs you compare the toe with the heels, the latter are from 1 to $1\frac{1}{2}$ line thinner than the former, and if the hind feet are studied, the difference between the crust at the toe and heels is half a line less than in the fore. The difference then between the wall of a fore and hind foot resides in the proportion of their diminishing thicknesses from toe to heels. This diminution in thickness bears a relation with the height of the crust; hence, when the heels are low they are proportionally thinner. The heels of the hind feet are generally higher than those of the fore, and in these the sole is generally a little the strongest; this greater height of the heels depends on the upright position of the hind fetlocks and the deeper concavity of the sole. In spite of these facts, says Meyer, Grosz, of Stuttgart, and Fuchs, of Carlsruhe, both distinguished writers on farriery, have stated the contrary.

Sometimes the inner quarter and heel are to be found weaker than the outer, but only in such cases where the former are more upright than the latter, or when the wall curls in on the inside, in which case it is always lower. Meyer asserts that in horses, whose movements and manner of standing are perfectly regular, the inner and outer portions of the crust take the same direction and are equally strong. When the standing is awkward, the weight of the body is unequally divided, the inner side of the hoof becoming upright and thin.

Meyer states that the walls of the hoof are stronger when most obliquely disposed, and the hoof is largest; *vice versa*, the smaller the hoof and the more upright its walls, the thinner and weaker it is.

In conformity with the false idea exposed at the beginning, in shoeing the hind feet in Germany, the nails were far between, and coarsest at the heels. Pricks were the consequences, and Meyer's attention was therefore specially drawn to the subject. Meyer recommends a space of about two inches in a middle-sized horse to be left free from nails at the toe, this being the principal wearing part, the heels being raised by calkins. On the inner and outer side of the toe the nails must be the coarsest, and more finely placed at the quarters and heels, leaving the posterior third of the crust on each side free from nails. The toe nails, therefore, must be driven coarser and higher than those at the quarters.—*Rep. der Thierheil.*, Stuttgart, April, 1855.

Respecting the relative thickness of the fore and hind feet, Rey* asserts that the wall is thickest and more upright in the hind than in the fore feet.

Meyer differs from Rey, as may be seen above.

We always thought that the toe was the thickest part of any foot, and the outer quarter next in thickness. That the inner heel and quarter of a foot are thinner than the outer is the opinion of all except Mr. Meyer, and the direction of the crust inside is generally more vertical than on the outer aspect of the foot. I have a hoof before me now, in which, on feeling for the the thinnest part of the wall, without looking at it, I readily determined on the one side, which turned out to be the inner one when examined, so that I was not biassed in my observation; but further and more accurate researches may profitably be undertaken on this subject. Bouley* says, "*generally*, the wall on the inner side is thinner than at the external quarter." Bouley's expression "*generally*," which I have underlined, seems to me to imply that under some circumstances such is not the case. I am well aware, like every other practical veterinarian, what a farrier would answer if the question were put to him, but that is no proof to stand up against Mr. Meyer's assertions of fact from direct observation.

In analysing Mr. Meyer's remarks on nailing, a partial view of the subject is not to be taken; but having had the opportunities to see the practice of different countries, we must point out the real state of the question that Meyer's teaching

* 'Traité de Maréchallerie Vétérinaire,' Lyon, 1852.

† 'Traité de l'Organisation du Pied du Cheval,' Paris, 1851.

may be understood and appreciated. The directions he gives us for stamping the nail holes in a hind shoe, differ somewhat from those followed out in England, and also from that, which we consider the best standard of all, good French shoeing. In France, the inner half of a hind shoe is fitted straight; the inner toe nail as well as those of heel and quarter are finely stamped. The coarse nailing at the inner toe would be incompatible with the manner in which the shoes are fitted out and feet prepared in London forges.

It was formerly believed in this country that nails could not be placed at the toe of the hind feet without laming the horse, but Coleman did much to overcome this prejudice; still the toe is often so stumped up, a large nook for the clip being additionally cut out, that nails are only placed at its sides, and the quarters and heels being deep and strong, the shoe is made to hold on to them.

In Germany, the shoe is made and fitted to furnish the hind foot more, and be more round and full at the toe than is usual with us. Calkins are used as a rule, and the shoe is also made longer at the heels, so that the calkins are behind the bearing part of the latter, and are less injurious than under other circumstances. The foot is prepared in conformity, the crust is left full round the toe, the heels are pared in proportion somewhat lower than in England. The shoe so fitted, and adjusted somewhat like on the French plan, both fore and hind feet go in many cases with calkins from year to year without much apparent injury; whereas, if in England we have to rough horses for a month or two during a winter's frost, many inconveniences and lamenesses result.

If then, following the German plan, which is the one adhered to by Meyer, viz., of paring the foot with the butters, leaving the whole substance of the wall, removing only a small portion of horn for the clip at the toe, striking a plain bearing surface down both quarters and heels, the shoe fitted wide, stretching across the toe and heels, and the latter kept straight rather than curved round, and at least half an inch longer than is the custom in London shoeing; then, I say, if all these conditions are adhered to, the nails may be distributed precisely as Mr. Meyer advised, viz., coarse at the toe, and finer as they approach the heels.

Though more space is left behind the last nail in the hind shoe than we in England should consider compatible with security, we can conceive, carrying out Mr. Meyer's plan as a whole, that it harmonises. He leaves more strength of wall in all the anterior parts of the foot; the hind foot is shod

more in conformity with the fore foot than is done with us. From the manner of adjusting their shoe, the calkins do not become levers as they would in the stumpy way that our horses go with such appendages, in which case the nails would be broken and the shoe loosened.

In England, the nail holes are stamped in the shoe nearer the extremity of the heels than Mr. Meyer recommends, but the shoes being shorter with us, the position of the nails in the hoof would not differ much in the two cases.

When we investigate such a subject as shoeing, as practised in different countries, the whole system of each country must be thoroughly learnt to be understood. The French shoeing, of all others, is undoubtedly by far the best as a whole; especially would it be for England, considering its complete adaptation to all our wants, applicable alike to the dray-horse and the Shetland pony, the hunter, the race, and park-horse. Nevertheless, there is much special good in the best German shoeing, as taught in the schools of Berlin, Stuttgart, and other parts. For frost shoeing, the German is the best we know of; and on seeing their horses going with freedom over snow and ice, drawing a sledge or carriage at great speed, the question has occurred to us—what would an English army lose in a northern winter campaign with horses shod according to English practice, compared to one with its horses shod on German principles?

CONTAGIOUS ERUPTIVE DISEASE OF THE GENITALS IN THE HORSE,—*Maladie du coit* of the French; Beschälkrankheit (stallion's disease) of the Germans.—A long essay, occupying upwards of forty pages of the *Recueil de Médecine Vétérinaire*, during the months of April, May, and June, appeared on the above disease, by M. Ch. Rodloff, of Posen; it was analysed and translated for the French journal by M. Verheyen. Hertwig's memoirs on the subject in the *Berlin Veterinary Magazine* for 1842, p. 269, and 1847, p. 373, are, like all the other productions of this learned author, full of accurate information, and Rodloff adds some facts of interest, but alters in no way the teachings of the Prussian professor.

An innocent and a malignant eruptive affection of the organs of generation in the horse have been described. They are essentially distinct diseases. Both exanthematous affections, the benignant one has been termed *Aphtha*, or *Phlyctenoid eruption* of the genitals; whereas the malignant form, very indefinitely named, because obscure in its real nature, is known by the appellation of *chancre plague*, or *malignant disease of stallions*.

The simple aphthous eruption is distinguished by Kreutzer* from the phlyctenoid variety. The latter, he says, is the *benignant stallion's disease* of Hertwig and other authors. Both affect horses, cattle, and sheep. The aphthous disease, *Aphthæ genitalium*, in general unaccompanied by fever, runs through its course in from two to four weeks. Transparent, whitish or yellowish, delicate vesicles, varying in size from a linseed to a pea, appear on the inner margin of the labia pudenda; shortly after, however, also on the outer surface of the vulva of the female: and in the male they occur on the penis, especially on its middle portion. The vesicles in a few days burst, leaving behind them quite superficial, roundish ulcers, with unbroken edges, a red base, not emitting pus, but a yellowish, glutinous, scanty secretion, which dries on exposure to air, forming a flat, brownish, thin, scaly scab. The scab on falling leaves behind a round, white, smooth cicatrix. Moreover, here and there is a slight superficial irritation, and a flow of yellowish, glutinous secretion, easily dried on exposure to the air; this is more especially witnessed in the region of the clitoris. Sometimes large bladders or vesicles form, which are not limited to the generative organs, but exist on various parts of the skin, such as over the neck, head, &c. It is a contagious, but extremely mild disease.

It remains for us to speak of the phlyctenoid eruption of the genitals, and of the third variety, which we shall for convenience term malignant disease of the same. We purpose giving a translation of a diagnostic table published by Hertwig in his memoir, in 1842, when the phlyctenoid eruption was looked upon as the same disease as the other, only differing in severity. Having thus concisely brought forward the symptoms of the two affections, we shall then show M. Rodloff's views, and then we may profitably discuss on some important points connected with them.

MALIGNANT ERUPTION.

1. A chronic affection, lasting several months, and even for more than a year.
2. In its lengthened course the disease spreads from the generative organs to the lymphatic and nervous systems, and in accordance with this progress three different stages of it are recognised.

PHLYCTENOID ERUPTION.

1. Of short duration, running through its stages in from two to five weeks.
2. This affection in reality is confined entirely to the genitals, no symptoms of a morbid condition of the nervous or lymphatic systems occurring.

* 'Grundriss der gesamten Veterinärmedizin,' Erlangen, 1858.

3. From its beginning to its very highest stage, as a rule, no fever is witnessed.

4. In mares there is often wagging of the tail and frequent attempts to urinate.

5. From the vulva flows at first a slight amount of mucus, which periodically increases in quantity, and soon becomes very thick, and afterwards purulent, offensive, and of a reddish-yellow colour, and on drying forms yellowish-brown scabs.

6. Unequal looseness and redness, with subsequent pallor and dirty reddish or yellowish colour of the mucous membrane of the vagina, with a few visible veins on the same.

7. Great swelling of the vulva, associated with heat at first, which disappears later, and as the tumefaction subsides puckered-up folds of the skin around keep the vulva open and induce a protrusion of the clitoris.

8. Vesicles, containing a yellowish fluid, on the mucous membrane and external surface of the vulva, which soon pass into ulcers; these heal in from a fortnight to three weeks, leaving white, brightly reflecting scars behind them.

9. In stallions, nodules, small pellucid bladders, and little ulcers, appear in moderate numbers on the penis; there is great swelling of the prepuce and scrotum.

10. Both stallions and mares in drawing forwards the hind feet often trip up, and in standing change about on one or more limbs.

11. Heaviness, faltering in motion, a blunt state of all the senses.

12. Flat, round, circumscribed boils in the skin, of the size of a sixpence to that of the surface of the hand, and the hairs erect on the boils.

13. Sooner or later swelling of the inguinal glands and some of the lymphatic vessels of the hind limbs.

14. Debility of the hind extremities, lameness in either one or the other of them. Paralysis of various parts, of the ears, of lips, especially of the lumbar region.

3. There is often a moderate amount of fever at the commencement.

4. The same appearances, but not always so striking.

5. In most mares there is a slight and regular flow of white, tenacious mucus observable, without increase in consequence of severity of other symptoms.

6. Equal darkish redness and looseness of the mucous membrane of the vagina, and in a short time regular disappearance of this condition without observable vascularity of the membrane.

7. Moderate swelling, with or without small wrinkles, so that the vulva is not kept open and the clitoris does not protrude.

8. Small elevations or yellowish vesicles, which either soon dry and, on falling off, leave behind red or whitish scars, or they may pass into the state of ulcers; in the latter case, from the appearance of the vesicles to the ulcers scabbing, only from eight to ten days elapse.

9. The same appearances, but usually more and larger bladders, and the swelling more speedily subsides.

10. These symptoms are entirely absent, and should they exist they are very slight and of short duration.

11. The animals lose none of their wonted vigour and energy.

12. No boils, and the coat is smooth.

13. These swellings rarely occur, and soon disappear.

14. These accidents never occur.

15. Striking and progressively increasing emaciation, especially of the hind parts.

16. Greenish-grey or yellowish secretion from the nose, swelling of the lymphatic glands in the sub-maxillary space. Ulcers of glanders in the nose; farcy buds and ulcers in different parts.

17. Death, either through the paralysis and emaciation or from glanders and farcy.

15. Never occurs.

16. This running from the nose never happens, and only in rare cases do we see distension of the lymphatic vessels and farcy buds or ulcers on the extremities.

17. Death never results.

From the symptoms here detailed, their occurrence only after sexual intercourse, it is not surprising that, like venereal disease in man, these affections of the horse should, besides the commonly accepted names I have mentioned at the beginning, have been designated *syphilis* or *French disease*, *chancre plague* or *lues venerea equi*.

Though not sparing in its attacks the English stallion abroad, the malignant eruption of the genitals has never, so far as I know, been seen amongst us here. In countries where sanitary laws for the avoidance of the great evil almost entirely prevent mares being covered, the proprietor of a stallion incurs damages for allowing his affected horse to serve a mare; the disease being an obscure one at first, rather than risk a prosecution he prevents all sexual intercourse.

The Government studs lose greatly, and besides going to great expense to purchase some of the cream of our thoroughbred and half-bred breeding stock, are constrained to use every effort to check the plague. They thus, in a great measure, put a stop to the procreation of an animal in every way essential to the wealth and welfare of their land.

Frequent in Hanover, Silicia, and Hungary, the so-called chancre plague spreads its ravages more through Eastern Europe and Russia, and is less seen in the west, viz., Switzerland and France. We must not, however, be surprised, though it be very improbable, if it trouble us with a call across the German Ocean or British Channel. Fortunately, English stallions are more needed on the Continent than Continental ones are here; mares, however, may bring it over to us, as, according to accredited observers, it lurks in the system for months before it shows itself with all its virulence. I trust, therefore, it will not be considered deficient in interest, because at present strange to our land. Our forces may have to crowd countries where it is prevalent, British veterinarians may be consulted, and, by many, it would be considered blameable in the extreme were not a disease, so

much spoken of, known to them, from their readings, if not practically. Space forbids me to dilate at present on the true nature, on the explanation of certain of the characteristic features, and on the treatment of the malady. I postpone these considerations to the next number of this Journal

16, UPPER WOBURN PLACE.

(*To be continued.*)

Facts and Observations.

A PROBABILITY.

By C. DICKENS, M.R.C.V.S., Kimbolton.

MY DEAR PROFESSOR,—The perusal of your analysis of the calculus connected with the interesting case reported in your last number, by Mr. Hutton, in which you found a nail as its nucleus, reminded me of an incident which occurred some two years since to myself. Its relation may not throw any light on past cases, but perhaps it may support that good counsel which you have given the profession ever since I have had the honour of your friendship (and for which I cheerfully acknowledge myself your *debtor*), viz., the necessity of compounding our own *medicines*.

Passing through a distant village, I was requested to look at a valuable horse, he having been ill for some hours; I will not, however, occupy your space with the details of an everyday case: sufficient that I thought it essential to exhibit a cathartic immediately; and not being provided with any, my client borrowed a dose of purgative medicine of a neighbour, who boasted of always keeping some by him, made at a druggist's. The ball as obtained was marked six drachms. Four drachms being sufficient for my purpose, I proceeded to detach a third part, and in doing so I found a *nail* imbedded in the mass, which is best described by stating that it resembled those I have occasionally seen in pieces of coarse canvas tacked on to the original gourds of Barbadoes aloes. This, doubtless, found its way into the mass through the carelessness of the manipulator, and had my patient had the benefit of the full dose of physic, it is very probable immediate or ultimate mischief would have ensued, and it might, perhaps, have formed a nucleus for a calculus.

EXTREME COLD PRODUCTIVE OF TETANUS.

DR. KANE, in his 'Report of the Return of the American Arctic Expedition,' addressed to the Secretary of the Navy, states that the winter of 1853 was passed at the bottom of a bay which opened from the coast in latitude 78 deg. 44 min. "The winter was of heretofore unrecorded severity. Whiskey froze as early as November, and mercury remained solid for nearly four months. The range of spirit thermometers, selected as standards, gave temperatures (not yet reduced) of 60 to 75 degrees below zero, and the mean annual temperature was 5.2 degrees Fahrenheit, the lowest ever registered. The extreme cold, combined with 120 days of absence of sun, gave rise to an obscure but fatal form of tetanus (lock-jaw). The exertions of Dr. Hayes, the surgeon of the expedition, had readily subdued the scurvy, but these fearful tendencies to tonic spasm defied our united efforts, and two of the seamen died from it. This disorder extended to our dogs, fifty-seven of which perished, thus completely breaking up my sledge organization. The operations of search were carried on under circumstances of peculiar hardship. We worked at our sledges as late as the 24th of November, and renewed our labour in March. Much of this travel was in darkness, and some at temperatures as low as 50 degrees. The earlier winter travel was undertaken by myself in person, but by the aid of a single team of dogs, and the zealous co-operation of my officers, we were enabled to replace the parties as they became exhausted, and thus continued the search until the 12th of July."

QUANTITY OF ATMOSPHERIC AIR REQUIRED FOR THE
RESPIRATION OF THE HORSE.

IF the computation made by Bousingault and others be correct, that ninety-seven ounces of carbon are converted into carbonic acid by the horse, during respiration, in four and twenty hours, and that 190 cubic feet of oxygen are called for to effect this, then it follows that as this gas makes up only one fifth of the atmosphere, five times that bulk of air are required for a horse to live in so as

to possess health; or 950 cubic feet of air are necessary for the natural respiration of the animal to be carried on. But this calculation supposes that the whole of the oxygen taken into the lungs is changed into carbonic acid gas; which is not the case, it being only about one third—the expired air from the horse containing between 6 and 7 *per cent.* carbonic acid—consequently three times that bulk of air, or 2850 feet are required for a horse *per diem*. How plainly does this show the necessity of proper ventilation being allowed where this animal is confined! And this, too, without taking into account the further necessity arising from the excretions and secretions, which are constantly going on, and by which the air is also rendered impure.

Extracts from British and Foreign Journals.

ON A PROCESS FOR THE DETECTION OF CERTAIN ADULTERATIONS OF OIL-CAKE, FLOUR, AND BREAD.

By THORNTON J. HERAPATH, Bristol.

FROM the statements that have been made in the *Agricultural Gazette* and other periodicals, it would appear, that the rape and linseed cakes, which are now so much used for feeding cattle, are often purposely adulterated, by unprincipled manufacturers, with mustard cake; and even the less costly varieties of oil-cake, which are employed in this country as manures, are said to be sometimes sophisticated with cheaper materials.

Having been called upon lately to examine several specimens of rape cake, which were supposed to be largely adulterated with mustard, I long experienced considerable difficulty in detecting the presence of the latter, as I found that the results afforded by the ordinary method of analysis were not in every instance perfectly satisfactory. The usual mode of examination, it is well known, consists in reducing the cake to a fine powder, and mixing it with cold water, when the presence of mustard is supposed to be evinced by

the pungent taste of the resulting solution, as well as by the lighter colour of the mustard-husk, as compared with that of the rape.* The process of analysis, however, that I was at last induced to resort to is, undoubtedly, much more conclusive, and will henceforth, I am satisfied, be invariably employed by agricultural chemists in investigations of this nature. It consists in treating the cake, previously broken up into small pieces, with repeated portions of boiling water, and squeezing the insoluble remainder in a linen cloth, so as to obtain the husk of the seed in a separate state, and then to act upon the latter with hot dilute nitric acid, and examine its structure under a microscope. By means of the nitric acid, the starch, grains, &c., are dissolved, and the husks themselves are rendered so transparent, as to readily admit of their structure, and the form of their constituent cells being observed. The form of these cells in the husks of the various oleaginous seeds is so essentially different, that a simple examination by this process will immediately convince us, that a better means of detecting the adulteration of the oil cakes could not be devised. Thus, for example, the cells in the mustard-husk are very small, whilst those of the rape and linseed-husk are considerably larger, and differ from them in shape. The mustard-husk has, moreover, so to speak, a hexagonal network of thicker tissue which is very characteristic, and is not observed in either of the others.

A somewhat similar method of analysis will also enable the chemist to detect the adulteration of wheaten flour, with the flour of the *leguminosæ* (beans, peas, &c.) and buck-wheat; and that of certain cereals, as barley, oats, rye, and Indian corn; as well as the adulteration of bread with mashed potatoes. M. Donny has shown that the cellular matter of leguminous flour, is very different in its microscopic characters to that of wheaten flour, and of the cereals generally. The mode, therefore, in which I proceed to separate this cellular matter for examination, is to heat about two or three hundred grains of the suspected flour or bread, in a small evaporating dish, with a sufficient quantity of dilute nitric acid, composed of about one part of ordinary nitric acid with six or seven parts of water, until the whole of the starchy and glutinous matters are dissolved; and then to collect the yellow cellular particles, which float as a scum on the surface of the acid liquid, and submit them to examination, by a

* See Professor Johnston's 'Instructions for the Analysis of Soils,' &c., p. 90.

microscope of moderately high power, between two pieces of glass. A comparative experiment with good wheaten flour, &c., will then immediately convince the operator if any adulterating ingredient is present. When the chemist is often called upon to perform such analyses, it is advisable for him to set up several specimens of the cellular matter from the different varieties of flour, &c., in glass cells in the acid solution, so that he may always have them at hand when required for comparative examination. By this process, I find, one or two per cent., and even less, of adulteration may be easily detected. This method of analysis possesses, moreover, the additional advantage of taking up but a short time for its completion; a matter which is often of no slight consequence to the analytical chemist.—*Chemist.*

BRISTOL LABORATORY; *May 18.*

ON THE ORIGIN OF THE SUGAR IN THE ANIMAL ECONOMY.

By M. POGGIALE.

Is sugar formed in the animal economy at the expense of the nitrogenous aliments, or of the fatty matters when feculent aliments are not administered? Is it produced by the digestive action or in the circulation? These are the important questions which I intend to treat of in this memoir.

FIRST QUESTION.—*Can Sugar be formed in the Animal Economy at the expense of Nitrogenous Aliments or Fatty Matters?*

First Experiment.—I have carefully analysed the milk of several bitches, subjected successively to different regimens. For the estimation of the sugar of milk, I have used the process which I mentioned some years ago, and which consists of applying the method of volumes and the process of M. Barreswil to the determination of sugar of milk.

The milk of a large bitch, fed in my presence, at Val-de-Grâce, on meat and bread, was analysed, and the following results were obtained:

Water	73.41
Fatty Matter	8.18
Caseum	13.04
Sugar of Milk	2.89
Salts, soluble and insoluble	2.08
	<hr/>
	99.60

The same bitch was then fed exclusively on meat for 21
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days, and the following is an exact statement of the results obtained. The proportion of sugar of milk diminished to 2·13 per cent. on the third day, 1·97 on the fifth, 1·89 on the sixth, and afterwards oscillated between 1·73 and 1·92 until the 21st day. It will thus be observed, that alimentation on meat alone diminishes the quantity of sugar in the milk, but this principle still exists in it in appreciable proportion.

Second Experiment.—A full-grown healthy dog was fed for 15 days upon cooked meat. Inhalations of chloroform were used to produce anæsthesia, the abdomen was opened, and the blood was collected separately from inferior *vena cava*, from the hepatic veins, and from the crural artery; the following per centages of sugar were then found in the blood:

	Sugar per cent. of blood.
Blood of the crural artery	0·055
Blood of the vena cava	0·148
Blood of the hepatic veins	0·153

This experiment, repeated three times, gave analogous results.

SECOND QUESTION.—*Is Sugar produced in the Animal Economy by the transformation of Nitrogenous Matters or of Fat?*

For the study of this question I instituted a new series of experiments. A dog was fed for ten days upon a mixture of beef fat and butter not containing a trace of sugar. Another dog was fed for ten days upon the muscular fibre of cooked meat, carefully separated from the fat. A third dog was kept without any food for ten days. The blood of the vena porta, vena cava, and hepatic veins, was collected from these three dogs and was found to contain:

Alimentation.	Quantity of Sugar per cent. of Blood.		
	Of the vena porta.	Of the hepatic veins.	Of the vena cava.
Butter and fat	„	0·146	0·130
Muscular fibre	„	0·149	0·128
Absolute abstinence	„	0·013	traces.

In another experiment, made lately, only traces of sugar were found in the blood of the hepatic veins and vena cava.

On comparing the results of these three experiments we are tempted to admit, that the fatty matters concur with the

plastic aliments in the production of sugar. But when we reflect, that the transformation of fat into sugar cannot be explained in the present state of our knowledge; that, on the other hand, the presence, in the economy, of an abundant respiratory aliment like fat, may in some degree shelter the sugar existing already, or formed by the tissues from the influence of the oxygen, we soon see that fresh researches are necessary to solve this problem.

THIRD QUESTION.—*Is the Saccharine Matter formed by the Digestive Action, in the Liver, or during the Circulation?*

First Experiment.—A full-grown dog was fed for eight days upon bread, moistened with fat broth. After two days of complete abstinence, he had one kilogramme of bread and some water given to him. Three hours after this repast, the abdomen having been opened and the blood of the various vessels collected separately, I ascertained the quantity of sugar in these products, and I found in the blood of the vena porta 0·322 per cent. of sugar; in the blood of the hepatic veins 0·327; in the blood of the vena cava inferior 0·103; and in that of the carotid artery 0·052 per cent. The matters contained in the stomach and intestines contained a good deal of sugar.

I made three similar experiments, but their general results did not vary.

Second Experiment.—A large full-grown dog was subjected to the action of chloroform on the third day of absolute abstinence, and the blood was collected from the vena porta, the super-hepatic veins, the vena cava inferior, and the crural artery. Analysis gave the following results:—0·025 parts of sugar in 100 of the blood of the vena porta, 0·049 per cent. in the blood of the hepatic veins, 0·042 in the blood of the vena cava inferior, and 0·023 in the blood of the crural artery.

Third Experiment.—A dog was left without food for eight days and then killed. The examination of the blood of different vessels gave the following results:—0·022 per cent. of sugar in the blood of the hepatic veins, and merely traces in the vena cava inferior. The blood of the vena porta contained no sugar. In another dog, which had been kept fasting for four days, no sugar was found in the vena porta, whereas some was found in the hepatic veins.

Fourth Experiment.—A dog, fed for eight days upon cooked meat, then after an abstinence of 36 hours, having received a copious meal of cooked meat, was killed during the course of the digestion. The blood of the vena porta contained no sugar. The blood of the hepatic veins contained 0·340 per

cent.; the blood of the inferior vena cava 0·083, and that of the crural artery 0·032. The alimentary matters were not examined. In two analogous experiments, we obtained the numbers given in the last two lines of the following table, which shows the results of the third series of experiments.

Alimentation	Quantity of Sugar per cent. from				Alimentary Matters.
	The vena porta.	The hepatic veins.	The inferior vena cava.	Arterial blood.	
	Gr.	Gr.	Gr.	Gr.	
Bread and fat broth . .	0·322	0·327	0·103	0·052	Much sugar.
Bread and fat broth . .	0·262	0·267	„	0·132	
Fasting for three days .	0·025	0·049	0·042	0·023	
Fasting for eight days .	„	0·022	„	„	
Cooked meat	„	0·340	0·083	0·032	
Cooked meat	„	0·152	„	„	
Cooked meat	„	0·159	„	0·060	

Conclusions.

1st.—That sugar may be formed in the animal economy at the expense of the nitrogenous aliments, and perhaps of the fatty bodies.

2d.—That alimentation on fat alone does not appear to diminish the proportion of sugar in the organism.

3d.—That the amylaceous aliments are transformed into sugar by the digestive action.

4th.—That when animals are fed upon amylaceous matters, the blood of the vena porta contains a considerable proportion of sugar.

5th.—That in animals fed upon meat no sugar exists in the vena porta; that it is found, on the contrary, in notable quantity in the hepatic veins, in the vena cava inferior, and in the arterial blood.

6th.—That the blood of the vena porta contains no sugar, when the animal has been enduring complete abstinence from food.

7th.—That, consequently, we are obliged to admit, that in animals fed upon nitrogenous matters and fat, the production of sugar takes place in the liver.—*Comptes Rendus*, No. 16, April 16, 1855.

AN EXPERIMENTAL INQUIRY INTO THE NATURE OF THE
METAMORPHOSIS OF SACCHARINE MATTER, AS A NOR-
MAL PROCESS OF THE ANIMAL ECONOMY.

By Dr. PAVY.

THE author begins by observing, that the saccharine matter met with in the animal economy is derived from two sources—from the vegetable kingdom, and from the liver of the animal itself; in each case being poured into the general circulation through the hepatic veins. The liver not only enjoys the power of forming sugar, but it likewise exerts (as shown by the experiments of Bernard) some modifying influence over that which is traversing its capillaries, and which has been absorbed from the food, by which it is transformed from *vegetable* into *animal* sugar, and thus rendered more apt for serving in the processes of animal life.

The sugar poured into the general circulation through the hepatic veins is conveyed to the capillaries of the lungs, where it in great part disappears, but never entirely so, according to very numerous analyses which the author has made on this subject. If the blood be traced onwards from the arteries through the systemic capillaries into the veins, the small amount of sugar which impregnates arterial blood will be found to be still undergoing a process of destruction; and what appears exceedingly interesting, this process of destruction is not carried on with equal activity in the different parts of the system at large. In the capillaries of the chylo-poietic viscera, the destruction is so complete, that the blood in the portal vein may be entirely free from saccharine principle, when the blood returning from other parts, as that contained in the femoral or jugular veins, remains slightly impregnated. This curious fact has a bearing that will be presently adverted to, with reference to the views to be advanced concerning the nature of the metamorphosis of sugar in the animal economy.

The *principal* seat of destruction of saccharine matter in the animal system being located in the respiratory organs, seems at first sight to support the theory of Liebig—that sugar is one of those substances which undergoes a process of combustion, by its direct combination with oxygen and its resolution into water and carbonic acid. Some experiments on the temporary obstruction of the respiration, and the examination of arterial blood before and after the operation, led the author to call in question this view, as he observed that

notwithstanding the supply of oxygen was cut off to such an extent as almost to occasion death, yet a considerable destruction of sugar took place in the lungs. This, coupled with the fact that a disappearance of sugar takes place in the systemic capillaries, and unequally so in different portions of them, induced him to push his investigations, and see if there might not be some other cause in operation in the living animal to effect the normal destruction of sugar, besides the direct chemical action of the oxygen absorbed in respiration. The results of these investigations, which were first directed towards the changes produced in blood normally containing sugar, injected through the capillaries of lungs removed from the animal, and artificially inflated with atmospheric air or oxygen gas, have induced the author to refer the metamorphosis of sugar, in the animal economy, to a process which is perfectly consistent and analogous with the well-known chemical bearings of this substance apart from the animal system.

In experiments which the author has now several times repeated, he injected blood removed from the right side of the heart of an animal—and therefore normally containing sugar—through the capillaries of the artificially inflated lungs of another; and found that as long as the blood retains its fibrine, there is as much destruction of its sugar as would take place in the living animal; but that where the fibrine has been separated from the serum and corpuscles, the sugar ceases to be influenced by the presence of oxygen, or ceases to disappear during this process of artificial respiration. It would hence appear, that something besides mere contact with oxygen is requisite for the destruction of sugar. But in other experiments, he has found that oxygen is nevertheless a necessary agent concerned in the process of transformation observed during the arterialization of the blood that has not undergone spontaneous coagulation. It would therefore seem, in fact, that oxygen acts secondarily on the sugar through the medium of the fibrinous constituent of the blood:—that it exerts some changes upon this azotized principle, which are capable of inducing the metamorphosis of sugar.

If we look to the ordinary chemical bearings of saccharine matter apart from the animal system, we find that an azotized substance undergoing the molecular changes of decomposition, placed in contact with sugar, readily excites a process of fermentation, and converts it by a mere alteration of the grouping of its elements into another substance, one atom of sugar ($C_{12} H_{12} O_{12}$) being resolved into two atoms of

lactic acid ($C_6 H_6 O_6$). We also find that sugar is not susceptible of oxidation except under the influence of strong chemical reagents. Chemical analogy, therefore, would lead us to look upon the secondary action of oxygen as the more probable process of physiological destruction; especially when we take into consideration, that nowhere do we meet with such a constant series of molecular changes taking place as amongst the azotized constituents of a living animal. In the above-mentioned experiment of injecting fibrinated and defibrinated blood through an artificially inflated lung, when the blood is capable of undergoing the molecular changes of assimilation on contact with oxygen as in the living animal, the sugar in great part disappears, but so soon as the fibrine is separated by spontaneous coagulation, and the blood has thus lost its vital characteristics, oxygen is no longer capable of exerting any metamorphosing influence on its saccharine ingredients.

If the molecular changes occurring during the decomposition of an azotized substance be capable of converting sugar into lactic acid, why should not the molecular changes occurring during the building-up or elaboration of this same nitrogenized compound effect the same? Indeed, we have seen that the process of destruction is carried on to a certain extent in the systemic capillaries, and more especially in those of the chylo-poietic viscera, where the molecular changes of nutrition are also correspondingly carried on with greater activity than elsewhere. So that analogy and experiment would tend to show that the physiological destruction of sugar is owing to a process similar to fermentation induced by the molecular changes occurring in the nitrogenized constituents of the animal during life; and, in accordance with this, we find lactic acid present in the system, and largely separated from arterial blood by the muscular tissue, and the secerning follicles of the stomach.

As regards the lactic acid fermentation, it is well known that the presence of an alkali favours, whilst that of an acid retards the process. In two experiments on animals, the author injected carbonate of soda and phosphoric acid into the circulating current, and observed in the case of the latter that sugar immediately accumulated in the blood.

The preceding observations refer more especially to the changes that take place in the saccharine ingredient of the blood during life; and the author next proceeds to notice some interesting phenomena observable during the decomposition, and even the spontaneous coagulation of blood containing sugar.

If the blood of an animal normally impregnated with sugar be placed aside, and allowed to undergo spontaneous coagulation, on examining separately the serum and clot on the following day it will be found, that although the serum may be largely saturated with sugar, the clot is entirely, or almost entirely, destitute of it. Now, as the clot is moist and remains to a certain extent infiltrated with the serum from which it has partially separated, it would appear that even the molecular changes arising from the spontaneous coagulation of the blood are sufficient to effect the destruction of normal animal sugar; and this conclusion is strengthened by the fact, that in diabetic blood (the sugar of which, as would appear from other considerations also, is not so susceptible of metamorphosis as the healthy variety) the sugar does not disappear to a similar extent in the clot.

Under the changes of the decomposition of blood, normal animal glucose is very readily metamorphosed. The rapidity of the metamorphosis depends on the activity of the decomposition of the animal substances present, and when the destruction of the sugar is complete the blood has assumed an acid reaction.

This acid reaction of decomposing blood is only observable in that which was previously pretty largely impregnated with sugar. It appears to be owing to the formation of lactic acid. Certainly, it cannot be due to carbonic acid, for the reaction remains after exposure to a boiling temperature.

The disappearance of sugar in the manner just pointed out does not depend on the oxygen of the air, except in so far as this agent is concerned in exciting the decomposition of the azotized constituents of the blood; for the sugar disappears as rapidly when there is a small, as when there is a large amount of surface exposed to the air. But if the air be carefully and completely excluded, no signs of decomposition of the animal parts of the blood are to be observed, and under these circumstances the sugar also remains. The disappearance of sugar is more rapid where the fibrine and corpuscles are present, than when the serum is exposed alone; and in accordance with this, the blood in the one case undergoes decomposition much sooner than in the other—a fact easily intelligible from the greater amount of azotized ingredients present.

If blood normally impregnated with saccharine matter be placed aside until signs of incipient decomposition are observed, and the sugar is beginning to disappear, exposure to a current of oxygen rapidly completes the total disappearance of the saccharine constituents. In this observation we

have a further illustration of the analogy that appears to exist, in the nature of the metamorphosis of sugar as a physiological process, and that which takes place chemically under the influence of an azotized compound, whose elementary particles are in a state of molecular transition. During life, the higher organic constituents of the blood are capable of undergoing the changes of assimilation on exposure to contact with oxygen, and there is a considerable destruction of sugar effected; for a short period after death these azotized constituents remain stationary and uninfluenced by oxygen, and with this, there is a corresponding suspension of the transformation of sugar; but, finally, the animal matter of the blood on contact with oxygen, especially during a warm temperature, assumes a state of decomposition, the molecular changes of which again excite the destruction or metamorphosis of saccharine matter.

The sugar *disappears far less rapidly* from diabetic blood under the influence of exposure to the atmosphere, than from healthy right-ventricular blood. From these, and a few other observations which he has yet been able to make on the blood in diabetes mellitus, the author, were he to hazard an opinion on the nature of that obscure disease, would be disposed to say that there appears to be a modification of sugar produced by the liver, which is not susceptible of undergoing the normal process of destruction in the animal system, and which, therefore, accumulating in the blood, is eliminated by the kidneys. The experiments of Bernard have shown that vegetable glucose (grape-sugar) is not susceptible of destruction in the processes of animal life, unless converted into animal glucose by the agency of the liver. Diabetic sugar would therefore seem to bear resemblance in its physiological relations to vegetable, rather than to animal glucose.—*Proceedings of the Royal Society*, vol. vii, No. 13.

ON THE VARIOUS BREEDS OF SHEEP IN GREAT BRITAIN,
ESPECIALLY WITH REFERENCE TO THE CHARACTER
AND VALUE OF THEIR WOOL.

By JOHN WILSON, Professor of Agriculture in the
University of Edinburgh.

(Continued from vol. xxviii, p. 705.)

Ryeland.—This is one of our oldest breeds, having existed in Herefordshire from time immemorial. Its name is derived

from the light sandy districts (old red sandstone) of Herefordshire, which, in early times, were supposed to be only suited for the cultivation of rye. It has always had the reputation of producing the finest quality of wool grown in this country, approaching that of the Merino, to which it bears also a marked resemblance in shape.* The breed, however, is of small size, and the fleece though fine in quality, is very inferior in weight to that of other breeds. Many attempts have been made by crossing to remedy these defects, but the success has not been sufficient to induce a perseverance in them, and consequently we find the pure Ryeland sheep every day becoming more rare, being replaced by others of a more remunerative description. In appearance, the Ryeland sheep have peculiar characteristics by which they are easily recognised. They are without horns, with white faces and legs; the wool growing close over the head and eyes with a tuft on the forehead. They are a little low in the shoulder, with a round compact body, and particularly large and full haunches and stern. They are hardy, and thrive well on moderate keep; feed readily for market, and, when at two and three years old, they weigh from 50 to 75 lbs. each. The meat is considered of good quality, the fat being deposited internally instead of on the surface. The ewes are prolific and good mothers; the young lambs are somewhat tender, and require care for the first week, after which they are pretty safe. The fleece is still valuable, though light in weight, averaging about 4 lbs.

Merino.—This breed, originally introduced into England by the late King George III, though not strictly a native breed,

* There are sufficient historical grounds for supposing that the points of striking resemblance between the Ryeland sheep and the Merino may be traceable to actual identity of origin. The coast of South Wales is traditionally said to have been the seat of frequent colonization from Spain. The types of race after some attestation of this in the dark eyes and hair, swart complexion, and small features of a large part of the Welsh population, extending from the shore of the Bristol Channel, through Monmouthshire, into the south of Herefordshire. But it is also well known that the attraction of the tin mines in the Scilly Islands, off the coast of Cornwall, brought repeated visits of the Phœnicians from the Spanish city of Cadiz, founded at a period of the most remote antiquity by those enterprising navigators of the Old World. The subtending line of the Welch coast would receive any vessel drifted by an Atlantic sou'wester beyond its proper point in those islands, and thus be brought into very early visitation direct from the native country of the Merino. There is a singular evidence of this intercourse in the existence of a remarkable intermixture of words in the Welsh language, identical in form and meaning with traces of the Phœnician tongue. The true breed of the Ryeland is still, though rarely, to be found in its ancient habitat—the light sandy soils in the vicinity of Ross. Though so small, it is the quickest feeder among all our original breeds.—C. WREN HOSKYNs.

deserves notice here as the parent stock from which are chiefly descended the large flocks in our colonies of Australia and the Cape of Good Hope, from which this country receives annually such large supplies of fine wools. The flock-masters in these colonies are accustomed from time to time to import Merino rams from this country for the purpose of improving their fleeces, as it is found that the Saxon and French Merinos, though producing a fleece of the finest quality, are not altogether so suitable for their purpose, as they are smaller and more delicate in constitution, and give a less return in wool. There are but few Merino flocks in England; those now remaining are descendants of the Windsor flock, Lord Somerville's, Lord Western's, Mr. Trimmer's, and others, and now exhibit a marked difference from the original Merinos, which were essentially a *wool-producing* breed, whereas the English Merinos of the present day are much improved in size, symmetry, and in disposition to fatten; at the same time the fleece has been increased in length of staple and in weight, without any great deterioration of its peculiar fineness.

The average weight of the fleece may be taken at from 6 to 8 lbs.; in some rare instances it is met with much heavier. They are hardy, and not more subject to disease than our other breeds; they thrive very well on moderate keep, and may be fed up to 110 to 120 lbs. weight at two years old; the mutton is considered to be of very good quality. It is found more advantageous to cross them with a *long-woolled* than a *short-woolled* breed. When crossed with the Romney Marsh sheep the size and shape of the animal are considerably improved, an earlier maturity and disposition to fatten is acquired, and a heavier fleece, somewhat inferior in quality but with a longer staple, is produced. At the same time they require a richer pasture and more attention than the pure Merinos.

Shetland.—The group of islands forming the northern extremity of Scotland possesses a breed of sheep whose hardihood of constitution and capability of enduring extremes of hunger and of cold render it admirably adapted for a country exposed, like the Shetland and Orkney Isles, to such frequent and furious storms, and from which little natural shelter is afforded. But little care or attention is bestowed upon the sheep, which are left entirely to their own resources, on the rough uncultivated lands, and are rarely collected together, save for the sake of their wool, when they are marked by their respective owners, and again turned loose on the moors: the breed consequently has exhibited no improvement, either

in carcase or in wool, for centuries past. The sheep are generally polled; sometimes they have small short horns, set wide at their base, more resembling those of a goat than a sheep; the tail is short and very broad, the body rather long, the legs short, with fine bone and strong broad hoofs; the head narrow and well set on. A peculiarity of the breed is, that when their food becomes scarce they at once resort to the sea-coast, and, following the ebbing tide, seek their supplies from the seaweeds with which the shores abound. This gives to their flesh a peculiar flavour, which, combined with the absence of attention to breeding management, renders the meat of a very indifferent quality. The fleece, which constitutes the chief value of the breed, is of various colours, white, black, gray, and brown. Like the covering of other animals exposed to extremes of climate, it consists both of wool and of hair—the one securing the natural heat of the animal, the other being more adapted as a protection against the rain and general humidity of the climate. This hair, locally termed “scudda,” grows through the wool, and in the winter forms the outer surface. As the season advances, the wool, the true fleece, becomes detached from the skin, and is then picked off by hand, the sheep being all driven up together for the operation, the hairy portion remaining as a protection to the animal against the weather. The wool has peculiar characters which render it admirably suited for fine hosiery purposes, but, being deficient in felting properties, it is not adapted for combing; about $1\frac{1}{2}$ lb. is obtained from each animal. Within the last few years the increased communication between these islands and the mainland has led to the introduction of Cheviot and other sheep, which, by judicious crossing, must tend shortly to the improvement of the native breed.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The American Veterinary Journal. Devoted to the Diffusion of Veterinary Knowledge. Edited by G. H. DADD, M.D., Veterinary Surgeon.

IN our last volume we noticed the formation of the "Boston Veterinary Institute," and congratulated our professional cousins on the event. We have now lying before us, forwarded by the editor, the first number of its journal, the title of which is given above. This is certainly *early* taking a wise step, and we can and do wish that it may be attended with a corresponding benefit to veterinary science.

The contents of this, the first number, are more varied, less scientific, and do not bear the stamp of so much real practical usefulness as we doubt not succeeding numbers will. It is not, perhaps, fair, and we are sure it is not liberal, to expect too much at the commencement. Of this we are also sure, that had the schools in this country done the like at their beginnings, the archives of veterinary medicine would have been richer in recorded facts, and its literature stood much higher than it now does.

The editor, at the conclusion of his opening remarks, in which he states the objects he has in view, and the means of attaining them, says—"We may fail in our duty to ourselves, the profession, or our patrons; but if perseverance and industry can accomplish the feat of fulfilling such duties, they shall not be wanting." We need hardly say that this is the right spirit wherewith to be animated, and the reward will be reaped if he faint not, while the performance of the promise will lead not only to an improvement of the journal, but to profit, in more senses than one. We extract the

following article on the "Importance of Ventilating Stables," &c.

"It was the intention of the *Creator*, that all animals, so long as they were permitted to exercise their natural instincts, and thus comply with the requirements of physiology—the science of life—should enjoy health and long life. Hence a great amount of disease and death results from the evils of domestication.

"One of the conditions, which physiology imposes, in order that a horse shall enjoy health, is:—that the atmosphere, at all times, and under all circumstances, shall be uncontaminated, so that the blood shall be decarbonized and purified of the defiling elements acquired in the course of circulation.

"Let the reader understand that the lungs are something like a sponge, elastic, composed of a myriad of cells. In the former, however, these cells have a vast internal surface, communicating with each other up to their common origin, the bronchial tubes and windpipe. On their internal surface we find a delicate yet highly important membrane permeable to atmosphere; in extent, it is supposed to occupy a square surface equal to that of the external body. In contact with this membrane comes the atmosphere. If pure—zephyr-like—it fans into healthful blaze the flame of life, upheaving from the living Vesuvius arid lava, in the form of carbonic acid gas, almost as destructive to animality as that issuing from its great prototype proves to vegetation.

"The stable atmosphere being pure and the lungs in working order, the blood is well arterialized, capable of supplying the waste of the animal machine and renovating its tissues.

"On the other hand, should the atmosphere be impure, it fails to vitalize the blood; the latter is unfit for the purpose of nutrition, and may be considered a non-supporter of vitality. Hence the need of pure air, the breath of life.

"But, are horses always furnished with pure air? Let the owners of unventilated, crowded, filthy, down-cellar and low-roofed stables, answer.

"Let those who have stables in the region of swamp, sewer, and stagnant pools of water, answer.

"In such locations disease and death run riot, and the noble companion of man instead of being within the ramparts of the science of life, is on the margin of death's domain. He may exist for several days without food and water; yet the consequent result is nothing, when compared to that occasioned by breathing an atmosphere highly charged with emanations, arising from his own body excrements, and decomposing bedding.

"A horse is said to consume in the lungs, in the course of twenty-four hours, ninety-seven ounces of carbon, furnished by venous blood; in order to perform this feat he requires 190 cubic feet of oxygen. Now suppose there are ten horses occupying the stable, they require in the same time 1900 cubic feet of oxygen, and consume 970 ounces of carbon. They are supposed, also, to give out from the lungs a volume of carbonic acid gas, equal to that of the oxygen inspired; and supposing the atmosphere to be saturated with only five per centum of the former, it is a non-supporter of life.

"Hence a horse shut up in an unventilated stable must sooner or later become the subject of disease; the evil may be postponed but the day of reckoning is sure and certain.

"Diseases, such as *horse-ail*, *influenza*, *catarrh*, *strangles*, and *glanders*, often originate and prevail to an alarming extent in the unventilated stable

and pest spot ; while in other locations, favorable to the free and full play of vital operations, the favoured ones seem to enjoy a remarkable immunity from the prevailing disease, or epizootic.

“Stablemen and husbandmen are often led to remark, that when they keep but few animals, disease and death, except in cases of accident or old age, are quite rare, but so soon as they *crowded* the same, sickness and death were the consequences.

“In view of supporting this theory, we may be permitted to remark that *ship* and jail fevers may be manufactured *ad libitum*, at any time when a large number of persons are congregated together in a given space ; no provision having been made for the admission of pure air. The unfortunate prisoners in the *Black Hole* of Calcutta are an example, and the mortality occurring on board our emigrant ships furnishes another illustration.

“A number of horses were once shipped from England to Spain, and on the passage, a violent gale arising, it became necessary to *batten down* the hatchway ; the consequence was that most of them ultimately died of either *glanders* or *farcy*.

“We contend therefore that the active or morbid germ of disease enters the living citadel through the pulmonary tissue, in an insidious manner ; and therefore much oftener than the generality of men would be likely to realise. Therefore it is a matter of vital importance that attention be paid to the ventilation of our stables.

“If proper sanitary regulations were established, and fully carried out in all our stables, *glanders* and other infectious diseases would be exceedingly rare ; they are so, among horses free from the control of man ; whose stalls are broad, as from ocean to ocean, their height ranging from earth to regions above ; the space pervaded by a pure atmosphere concocted by the Great Chemist, pure as the pearly drops, and refreshing as the morning zephyr. In such locations death hath no terrors nor disease any victims.

Therefore we entreat husbandmen to ventilate their stables, and thus prevent *unnecessary* disease.

The above was intended for the last month's number of our Journal, but press of matter prevented its insertion. Since then we have received Nos. 2 and 3 of the *American Veterinary Journal*, in which we are pleased to see a marked improvement.

THE VETERINARIAN, FEBRUARY 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

ON THE PRESENTATION OF TESTIMONIALS.

WE are told to give "honour to whom honour is due." And who can object to this? Surely none but the jealous and the malignant.

From time to time it is gratifying to be called upon to record instances of respect publicly shown to the members of our profession. Not long since this occurred to the ex-president of the Royal College of Veterinary Surgeons, Mr. W. Robinson, to which testimonial the members of the profession were allowed to contribute, and they did so with much pleasure, remembering that he had been the means of reconciling conflicting interests in the Royal College of Veterinary Surgeons, and thus to preserve its harmony, not to say the integrity of that institution. Subsequently to this well merited compliment being paid him, another manifestation of the feeling of his friends has been evinced by subscriptions entered into by them for an engraving of his portrait as ex-mayor of Tamworth, and Veterinary Surgeon to the Queen's Royal Yeomanry Cavalry; to which a long list of names is attached. We have seen the engraving but do not think the artist has been happy in catching the true expression of the countenance of our friend. There is a resemblance, but it is not a likeness; at least, not such a one as we could have wished to have had, since the countenance bespeaks the character of the man, and is the index of his mind and manners. Going a little further back, we remember a dinner having been given to Mr. E. Stanley, by his employers, on his leaving Banbury for Birmingham; and were it necessary, similar proofs of esteem could, we doubt not, be brought forward. These are honours conferred on the recipients of which they may be justly proud.

In the present number of our Journal will be found an account of the presentation of a testimonial to another member of our profession, Mr. Lucas, of Lutterworth; the value of which is perhaps unprecedented with us. Surely that man must be highly respected when an appeal of this kind is responded to by the whole of the district in which he resides, as we are told this was; and highly gratifying to him must have been this expression of the feelings of his friends.

And what is there, we would ask, in the conduct of one that may not be emulated by others? We do not say that all will be alike successful, but we feel convinced that if all were alike desirous of meriting the esteem and confidence of their employers by a conscientious discharge of the duties of their calling, and consistency of conduct, those instances would be less rare than they are, and not "like angels' visits, few and far between."

We make these remarks more especially for the benefit of the younger members of our profession; convinced as we are that an earnestness of purpose, coupled with a determination to excel and actively to fulfil the duties thereof, will not fail ultimately to ensure its reward.

Fain would we hope that some observations which fell from the chairman after the dinner, about "a youthful sprig of a student, fresh from the college," &c., were intended as facetious; for there was a period in his life when Mr. Lucas was that; but time has given to him what it does to all who make a proper use of it, consolidation of thought and judgment, the exercise of which has called forth the esteem of those who have required his professional services. Or it may be that these remarks were intended to check the disposition, a little too prevalent we fear with some, at the present day, to display their abilities. Is not self-sufficiency in the rising generation, we would ask, characteristic of the age in which we live? So profound is the knowledge of many that they seem to condemn the wisdom which results from experience. Such persons, perhaps, would do well to remember the distinction the poet has drawn:

“ Knowledge dwells
In heads replete with thoughts of other men :
Wisdom in minds attentive to their own.”

Or is it that such has been the “march of mind” of late years that the older ones are completely “distanced” in the intellectual race, and are, consequently, “nowhere”? Yet surely it is no proof of wisdom to indulge in a mere use of technicalities, which often perplex rather than inform the mind of the inquirer, and frequently are resorted to as a cloak for ignorance, or a screen for the want of knowledge.

These, however, are no times for apathy and the folding of the hands in ease. All around us is making progress, and we cannot, dare not stand still. To insure success in life, probity of manners, associated with a love of his vocation, and a determination to acquire the possession of principles wherewith to be guided in the practice of his profession, are all that is necessary on the part of the aspirant. Experience is only acquired by time; and men are no more born with the former than they are with beards, which time also gives. We have therefore no right to expect from him who is just entering on the practice of his profession what we have from the veteran in science.

As this subject has thus been incidentally brought under our notice, we may be permitted to state, that we are no friends to the paying of posthumous honours, although in this feeling, we doubt not, we are opposed to “the many.” We are not, because we consider that it ministers to the pride of the living, if it have not its beginning and its ending there. This may sound somewhat censorious, but of what use can honours be to the dead? In the grave there can be no consciousness of them, and the life beyond it needs them not. It may be answered, such things act as incentives to the living to “go and do likewise.” Would not the same be attained, and better far, were the honour conferred while there existed a capability of enjoying and appreciating the intention? And this too before the grasshopper becomes a burden, or the silver cords are loosened; so that the closing

years of the receiver's life may be often cheered with the pleasing retrospect of the estimation in which he is held by his fellow-men. We have known talent to be in want, and industry not to meet with its reward in life; probably from some peculiarity or eccentricity in the person possessing the one or exercising the other. Genius is often eccentric. Or it may be that the endeavours of the individual were ill-timed; he lived before his day, so to speak, and therefore he was not duly estimated. Years, however, having rolled on, the things which he had proposed were imperatively called for, the wants of the community demanded them; and then was brought to remembrance the man who had first suggested them, and with this the contumely and neglect in which he was allowed to live and die. Shame now hides herself behind a canopied mausoleum to his memory, and pride complacently rests upon the monument erected to his neglected and too early discerning powers. What if the tomb were as munificent as that erected by the luxurious monarch Cæsar Augustus? Its ruins would only in succeeding ages serve to astonish the traveller and puzzle the antiquary. Gone like it would be its terraces of marble and its groves of evergreens, its mystic passages, and its public walks. The inquiry might even be made for whom it was erected? for like many of those costly structures that now in a state of dilapidation line the Appian way, no inscription would record whose ashes are in-urned.

“Praises on tombs are idols vainly spent;
A good man's name is his best monument.”

We are quite aware that there is yet another view which may be taken of this subject, namely, the satisfaction afforded to his relatives; and it is only on that ground that we can acquiesce in what has been the general custom of mankind. Yet here again we see no real objection why the honour should not have been conferred while living. This, however, is a question of such delicacy that we refrain from entering on its consideration, and shall content ourselves by closing our remarks with a quotation from a letter that recently appeared in the public prints, written by a well-known popular author.

He says, "there is no reason why we should delay our tokens of respect to those who deserve them until the heart that our sympathy could have gladdened has ceased to beat. As men cannot read the epitaphs on the tombs that cover them, so the tombs that we erect to virtue, often only prove our repentance that we neglected it when with us." With these sentiments we need hardly say we entirely concur.

PROFESSIONAL REUNION.

A RUMOUR has reached us that the President of the Royal College of Veterinary Surgeons, being convinced of the great advantages that must result from a union of the members of the profession with the scientific bodies of the metropolis has determined, with his usual liberality, to repeat his invitations of last year, to a *soirée*. The precise time has not yet been fixed upon, because, as report says, it depends, to a certain extent, on the will of royalty, there being some hope that his Royal Highness the Duke of Cambridge may honour the meeting with his presence.

Should our anticipations be realised, we trust that our country friends will make every effort to attend on the occasion.

PRESENTATION OF A TESTIMONIAL TO MR. LUCAS, OF LUTTERWORTH.

ON Wednesday, December 19th, a meeting including most of the influential noblemen and gentlemen in the neighbourhood, was held at the Eagle Hotel, Rugby, for the purpose of marking their sense of the long-continued services, kindness, and good feeling, of Mr. Joseph Lucas, veterinary surgeon, Lutterworth, by presenting him with a testimonial, the proposition for which had been most heartily responded to by the whole district.

The testimonial comprised a beautifully executed portrait of Mr. Lucas, upon his favorite chesnut mare, a splendid silver tea-service, a massive salver, and a purse containing £345.

The centre of the salver bore the following inscription:—
 "Presented, this 19th day of December, to Joseph Lucas,

veterinary surgeon, of Lutterworth, by 370 of his friends and neighbours, as a testimonial of the high regard in which he is held, and also as a mark of their great admiration of his professional skill. 1855."

At the dinner upwards of ninety noblemen and gentleman assembled. Lord John Scott occupied the chair, and was supported on either side by Sir Thos. Skipwith, the Hon. C. Lennox Butler, J. Broughton Leigh, Esq., and other influential gentlemen. Mr. Lucas sat on his Lordship's right hand. The vice-chair was occupied by C. M. Caldecott, Esq.

After the usual national and patriotic toasts had been drunk, *his Lordship* rose to propose the toast of the evening, and in so doing, observed, that he had received letters from Mr. Newdegate, Mr. Angerstein, Mr. Harbury, Mr. Fox of Lutterworth, Lord Denbigh, and Mr. Crawford, pleading that unavoidable circumstances prevented their being present, but all expressing the same sentiments towards Mr. Lucas which all who were there felt (applause). It would be difficult for him to satisfy himself and them in saying all they could wish before the object of their good wishes. Although they liked a man it was rather awkward to butter his face, but still it was difficult to avoid alluding to circumstances in the character of Mr. Lucas which had called forth their very handsome and liberal testimonial. The present was the day of empiricism and quackery, and those who had witnessed a youthful sprig of a student fresh from college make his first acquaintance with an animal, and when they wished to know what was the matter with it, overwhelm them with a torrent of indifferent and unintelligible Greek and Latin, would with him appreciate the advantage of consulting a gentleman having an extended knowledge of the animal he had to treat. He had no great objection to see that his medical adviser could ride a horse as well as doctor a horse. He would not go farther into other branches of his profession, because they had all tested him and found him proficient. But what a thing it was to be proficient now, when there were so many new inventions. Mr. Lucas, he had no doubt, was completing his education from day to day, progressing with the progress of the age, and had turned aside from no new invention he had found worthy of notice (applause). He had proved himself a profound, sagacious man, and had a great horror of quackery and empiricism, and consequently of hypocrisy. They produced a plain, sensible, judicious, and honest man, and they came there to testify what was their belief in that man, and he

most heartily concurred in it. Such people were not to be found growing upon hedges, and when they passed away it was not so easy to fill their places (applause). He thought it was quite time, after the long experience they had had of their friend's worth, that they should do what they had done so handsomely; and that they really felt his value, was shown by the roll of subscribers, containing all the names in the neighbourhood, small and great. It was a great satisfaction to him to have the honour of proposing Mr. Lucas's health in so respectable an assembly, but he felt great difficulty in not being able to do justice to so meritorious an individual. They would excuse any deficiency of his, and would prove to Mr. Lucas by the hearty ringing of their voices, how ready they were to concur in the efforts he had made to express their sentiments, and their wishes that he might enjoy long life and happiness, and that his memory might be cherished (much applause and vehement cheering).

Mr. Lucas, who on rising was received with tremendous applause, said:

"My Lord and Gentlemen,—I beg you will permit me to thank you most cordially for the honour you have done me, not only in considering me worthy of, but in presenting to me this day your kind and handsome present, which I assure you I accept with the greatest pleasure, as a testimony of the approbation of my numerous friends, for my conduct and practice as a veterinary surgeon for forty years, and which I have worked at early and late, as few men know better than I do how absolutely necessary to all of us is the health and soundness of our horses, upon which we are more or less dependent for our pleasure, our comfort, and indeed I may say, in a great measure for our daily bread. With this knowledge, I should have been unworthy of your notice if I had not exerted myself to the utmost to alleviate the complaints of the animals which have been committed to my charge, and if I had not done so, should I in any way have deserved the flattering terms which the noble lord has used in presenting me with your kind present? which, rest assured, I will keep as long as I live, and let it be handed down to some member of my family as an evidence of your generosity and kindness towards an humble individual like myself—as an inducement for such a person to labour diligently, faithfully, and honestly, in whatever situation in life he may be placed, as the only sure means of obtaining the good wishes of his friends and the respect of his neighbours. In conclusion, allow me to thank you, my friends, for the many kindnesses which I have now, and at all times, received from you, as well as for

the honour which has this day been conferred upon me, and for which I hope and trust you will one and all accept my best wishes for your present and future happiness."

The health of the noble president was next proposed by *Mr. Caldecott*, in a very appropriate speech, in which he took occasion to remark that the noble lord was known to his tenantry as a good landlord, always anxious to co-operate with them in improving the land; to the poor as a benevolent and discriminating benefactor (loud cheers); to the gentlemen present, and the world, as a successful breeder of racing stock, and a thorough supporter of all honourable sporting. (Tremendous cheers).

In responding to the compliment, *his Lordship* said,—if he could only perform one half of the good things which had been said of him, he should consider he was a very clever fellow. He had experienced the greatest satisfaction in presiding over them that day. He confessed he felt a little nervous concerning his fitness to discharge the onerous duties which had been assigned him, as it was not the first time he had "let off" in that room. He thought if he broke out that evening, they would forgive him. The only aberration he had observed in the committee was their having selected him as chairman, as the gentlemen he saw before him seemed all to be orators, statesmen, chairmen of quarter sessions, &c. They had however selected him, and he would do his best. If they were as happy in the selection of him as he was in fulfilling the duties assigned him, they would all feel happy together in the thought that they had met to do justice to a thoroughly honest man.

Several other toasts followed suited for the occasion, such as the health of the Committee, Vice-Chairman, Town and Trade of Lutterworth, &c. On the chair being vacated, *Mr. Caldecott* was called upon to preside, and the rest of the evening was spent in harmony and conviviality of the most enthusiastic description.

ARMY APPOINTMENTS.

From the *London Gazette*.

LAND TRANSPORT CORPS.

To be Veterinary Surgeons.

William Dorofield, M.R.C.V.S., gent.

George Fleming, gent.

Joseph Ball, M.R.C.V.S., gent.

John Moir, gent.

BREVET.

Veterinary Surgeon J. Lord, M.R.C.V.S., attached to the Osmanli Horse Artillery, to have the local rank of lieutenant in Turkey, while serving in the above corps.

HEAD QUARTERS, SEBASTOPOL, *Jan. 3.*

Staff Veterinary Surgeon Western, has been attached to Land Transport Corps, from the 17th November, 1855.

NOTTINGHAMSHIRE YEOMANRY CAVALRY.

Henry Pyatt, gent., to be Veterinary Surgeon.

OBITUARY.

To the long list of departed members of our profession which last year we had the painful duty to record, we regret having now to add the death of Mr. R. Taylor, of Bury St. Edmunds. Mr. Taylor had exceeded by a few years the allotted period of man's sojourn in this "vale of tears," having reached the seventy-third year of his age. He passed his examination in 1804, being then in his twentieth year, and immediately afterwards went to reside at Bury, where he lived fifty-three years. Few men, in or out of the profession, were more highly estimated or more deserving of respect than our deceased friend, and none received a greater share of praise from all who knew him, for his strict integrity, and high and honorable conduct.

He had before his death been confined to his room for four or five months with a complication of diseases, but his constitution being remarkably strong, he gradually recovered from each unfavorable symptom, until at last it was observed that the brain had become affected. On the day before Christmas day he became perfectly insensible, and was then moved into bed, where he had not been for four months, having always night and day sat up in his chair.

From this comatose state he did not recover, and died without the slightest pain on the morning of New Year's day.

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Communications and Cases.

CANCER AFFECTING SOME OF THE NERVES,
WITH THEIR GANGLIA; AND ALSO A POR-
TION OF THE BRAIN OF A COW.

By G. W. VARNELL, M.R.C.V.S., Assistant-Professor,
Royal Veterinary College.

CONSIDERING the subjoined description of some morbid parts recently dissected by me to possess some degree of interest to the profession, I avail myself of the opportunity afforded by the pages of the *Veterinarian*, to give publicity to the same.

A brief history of the case in which the morbid parts occurred has been communicated to me by Mr. H. Flower, Student at the College, and is as follows:

"About two years since, we were called in to attend a cow, the property of a gentleman residing in our neighbourhood. On examination we perceived a cauliflower excrescence growing from the membrana nictitans, about the size of a strawberry, from which issued an ichorous discharge that excoriated the adjacent parts, and which bled on the slightest touch. We at once decided upon taking it out, and this was accordingly done, the parts being subsequently touched with Argent. Nitrat. After this, the cow appeared to go on well for about twelve months, without any reappearance of the cancerous growth. At the conclusion of that time, we were again sent for, and found the cornea had become of a bottle-green colour, and that the sight of the eye was completely gone. About three months after this, a fungoid growth sprouted from the cornea, which increased in size very rapidly, but was repressed by the application of a little Alumen Ustum. Shortly after this, the eye receded considerably into the socket, and eventually it sloughed entirely away. Some weeks afterwards, she became partially paralysed, and was unable to masticate. The lower lip was pendulous; the ear hung down by the side of the neck on the affected side; difficulty of deglutition was experienced, and the saliva flowed from the

mouth, mingled with the partially masticated food. Attenuation of the paralysed muscles quickly followed, and much general emaciation of the frame. The owner being desirous of obtaining another calf from her, she was kept alive with gruel; but, as it was soon seen she could not live, so as to give birth to a calf, she was destroyed. This being about a fortnight before her time, the calf was immediately taken out, and it seemed likely to live and do well. It, however, lived only three days; the immediate cause of death being injudicious feeding."

Examination of the diseased parts.—The left eyeball had entirely disappeared, and the anterior half of the orbit contained only a blackish-brown mass, about the consistence of soft cheese. The muscles of mastication on the left side of the head were nearly wasted away, and when cut into, they presented the appearance of dark fawn-coloured matter; this being degenerated muscular tissue, mixed with tendinous fibre. In bulk they were fully two thirds smaller than the corresponding muscles on the opposite side of the head.

Mental inquiry as to the cause of the condition of these muscles, directed the mind at once to the state of the inferior division of the fifth nerve, and a probability of the lateral nasal of the ophthalmic division being also affected. To insure, however, a thorough investigation, I carefully dissected the several organs as they presented themselves; and not only those on the affected side of the head, but likewise those on the opposite side; for the purpose of comparing one with the other as I proceeded. The muscles were raised one by one; the nerves traced to the base of the cranium; and the arteries, and veins of the head, and also the glands, with their ducts, were all carefully examined by me.

I have before stated, that the muscles of mastication on the left side were atrophied to a great extent; and I may also add, that they were completely paralysed. The branches of the third divisions of the fifth nerve, up to within about two inches of the sphenoid bone, were very much attenuated, possessing the character of reddish-grey membranous cords only, with the exception of one branch of the ophthalmic, the lateral nasal; the condition of which I shall presently allude to.

The inferior maxillary division from the foramen-lacerum-basis cranii, and the superior maxillary division from the foramen in the sphenoid bone, for at least two inches in length, were as thick again as natural, and very dense in structure. The sphenopalatine branches of the fifth, embracing Mickel's ganglion, especially, were very much enlarged, unusually hard, and when cut through the sensation of cutting hard bacon was experienced. The lateral-nasal and inferior-trochlea branch, from the point where it is given off from the ophthalmic to its entrance into the upper part of

the left nasal fossa, was three or four times its natural size, except for a short distance where it passes from the orbit into the cranial cavity; and even this small portion of the nerve was as much enlarged as the small bony canal through which it passes would admit of.

I next removed the roof of the cranial cavity for the purpose of examining the brain and the nerves within the cranium. The brain itself had a very remarkable appearance. It was of a palish yellow-white colour, and something like soft putty in consistence. It had lost all the elasticity which a healthy brain possesses, and when pressed upon by the fingers, the indentations remained; giving evidence of its not having been supplied with blood to an extent consistent with health.

The brain being removed from out its cavity, with the exception of the pituitary-body, its base was found to present the same appearance as the upper surface. The nerves were attenuated at their roots, but in other respects they were apparently healthy, with the exception of the olfactory and the trigemini of the left side; and even the latter, quite at its root, was simply wasted. A short distance, however, from its origin, embracing the cassierian ganglion, and also the three divisions of this nerve, up to where they pass out of their respective openings, it was enveloped in a mass of abnormal structure, in magnitude as large as a walnut. From this point, as I have before stated, the three divisions were very much thickened for about two inches in their course. The above abnormal growth extended to, and implicated the pituitary body, as well as the dura mater on one side and in front of the sella-turcica. The left olfactory bulb, and the nerves which pass from it through the cribriform plates of the ethmoid bone were affected in the same way, as was also the lateral nasal nerve.

Thus far I have given a brief outline of the ravages of disease. Before I describe the physical characters of this morbid product, and give my opinion as to its nature, I will just allude to the pathological condition of the internal carotid arteries, the left artery in particular. This artery, from the point where it is given off from the carotid, was completely impervious to the passage of blood, being surrounded by the diseased growth that involved the cassierian ganglion, which, doubtlessly, had much to do with its obliteration. The diameter of the interior of the right internal carotid was so much lessened as scarcely to admit of a bristle being passed through it.

The appearance of this abnormal growth, affecting the

two ganglia—the casserian and the spheno-palatine, the olfactory bulb and nerves, the lateral-nasal nerve, and the pituitary body, was as follows :

Its outer surface was nodulated, each nodule being made up of granules about the size of a mustard seed. It was of a yellowish-white colour, and when cut into resembled the cut surface of gristly fat, if we suppose it to be granulated. The thickened parts of the nerves before alluded to, with the exception of the lateral-nasal, seemed to depend upon a fibrous interstitial deposit, which gave to them, when cut, an irregular striated aspect.

Feeling confident that the above morbid production was malignant in its nature, I was induced to examine a portion of it by the aid of the microscope. The small portions I examined were simply treated with water. I observed cells of various sizes and forms to exist. They averaged, as near as I could make out, about $\frac{1}{1000}$ th of an inch in diameter, some being larger than this measurement, and others smaller. Some of them were ovoid in form, others circular. Some were oval, with angular processes, apparently drawn out. Others were pear-shaped, and some were found fusiform. All of them were nucleated, and from their very near resemblance to the cells of scirrhus cancer, as described and delineated by Paget, in the second volume of his admirable work on 'Surgical Pathology,' I feel no hesitation in stating that the disease affecting the nerves and ganglia in this case was cancer.

Remarks.—There are some points in this case which I cannot refrain from making a few brief comments upon. I am of an opinion that all who are acquainted with the habits, and especially with the diseases of our domesticated animals, will agree with me that the ox tribe is more often the subject of scrofula, and also true cancer, than any other animal, with the exception, perhaps, of the dog. If such be the case, it becomes a very important matter for the breeder's serious consideration, as well as the veterinary surgeon's when forming his diagnosis and prognosis.

It must be obvious to all close observers and reflecting minds, remembering the tendency there is in disease of the above nature to be transmitted from one generation to another, that it would be unwise to breed from parents affected with cancerous growths, or possessing a scrofulous diathesis.

This peculiarly destructive disease, as far as my experience goes, is found to exist to a greater extent in the higher than it is in the more common breed of cattle.

The next point I would allude to is, the care the practitioner ought to take in forming his *diagnosis*, so as to determine the true character of the growth or tumour to which his attention is directed. To ascertain, if possible, whether it be malignant or non-malignant, is of the greatest importance, since his prognosis will necessarily be based upon the conclusion to which he has arrived.

Simple tumours, as a rule, may form independent of any constitutional peculiarity in the animal, and may generally be removed without our anticipating a return of the affection; whereas a cancerous tumour is a local evidence of a constitutional tendency to this affection, and the growth itself may spread and destroy the tissues in its neighbourhood, or be transferred to other and more remote parts of the body.

My next remark is with reference to the *prognosis*; in forming which, we have two interests at stake, namely, our own reputation, and the welfare of those who seek our aid. With regard to ourselves, we should first ascertain whether the disease we are called upon to treat be cancerous or not in its nature; and to arrive at a knowledge of this, let a small portion of the diseased mass be placed under the microscope, and its appearances compared with plates delineating such structures, these being by acknowledged authorities; and should the result of the investigation satisfy our minds that the disease is cancerous, we should not hold out any hopes of a radical cure being effected. The experienced eye, however, can very often form a correct opinion of the nature of such growths without the aid of these instruments, yet is their use always to be advocated in minute anatomical investigations.

WHAT TO DO AND WHAT NOT TO DO.

By J. HAWTHORN, M.R.C.V.S., Kettering.

SIRS,—In looking back upon rather a long professional life, a few cases of disease very alarming to the owners of horses, but really requiring little, or the very simplest treatment, occur to my mind. The following is a specimen, which should you think it interesting enough for insertion in the *Veterinarian*, may, perhaps, be followed by one or two more. A gentleman had a cart-horse affected with a large swelling of the sheath, and which was dressed with “strong

oils," and fomented with hot water, but it got worse, and threatened fatal consequences. I advised him to use *tepid* instead of hot water; to give the animal a dose of aperient medicine, and plenty of walking exercise.

The horse, under this treatment, was soon well. The method which was being pursued would no doubt have put the horse's life in jeopardy, but if left to himself he would soon have been in perfect health again; thus showing that a good doctor exhibits his skill as much in knowing what *not* to do, as in knowing *what to do*.

The exciting cause, in this case, was the dirt and filth allowed to accumulate in the sheath.

I have had many similar cases in the udders of mares, which got well by the use of warm water and cleanliness only, although frequently œdematous swellings would appear in the thighs and along the linea alba.

I am, sirs,
Yours truly.

CASE OF THOROUGHPIN, TREATED BY PUNCTURATION AND PRESSURE.

By W. A. WHEATLEY, M.R.C.V.S., Reading.

THE subject was a five-years-old cart-horse, the property of the South-Eastern Railway Company, admitted on the 1st of September, 1855, with an immense thoroughpin on the off hock. The animal being then in a very high condition, a support shoe was placed on the foot of the diseased limb, and the frequent application of cold water to the diseased parts resorted to; the diet being restricted to mashes.

October 6th.—The horse was considered in a fit state for the operation. Accordingly, I had the animal secured by a side line, and first punctured the enlargement with the exploring needle, in four different places, but as the imprisoned fluid did not escape so readily as I expected, I determined upon opening the part with the lancet, which being done, the fluid escaped to the amount of a small teacupful. It was of a thin consistence, and of a pale straw colour. I then applied bandages dipped in cold water, and kept the hock constantly wet.

7th.—The swelling had very slightly returned. I gave

some aperient medicine, and continued the bandages with cold water, and applied a suitable truss to the hock.

I need not give a report of the case from day to day; suffice it to say, that the cold water and the truss were continued in use—and the animal never manifested the least inconvenience from the operation.

November 21st.—He was considered *cured*; not the least appearance of the enlargement being left.

29th.—On this day the horse was attacked with abdominal obstruction, and despite all our remedial measures consisting of active purgatives; as Solut. Aloës, Calomel, Oleum Lini et Crotoni, with the frequent use of medicated enemata, counter-irritants, &c., he continued to grow worse till the 1st of December, when death took place.

This was the fourth attack of this kind that the animal had experienced while under treatment for the diseased hock.

I forwarded the hock to Professor Spooner for dissection, having previously mentioned the case to him, and he has very kindly informed me that the operation was perfectly successful.

I am, gentlemen,
Yours respectfully.

INTERRUPTED DILATATION OF THE DUODENUM, FROM IMPACTED INGESTA, ACCOMPANIED WITH VOMITING. .ALSO, SACCULATION OF THE RECTUM.

By T. M. LEECH, M.R.C.V.S., Bakewell.

GENTLEMEN,—You will receive a canister containing two portions of intestine, and also a hardened mass composed of the berries and twigs of the thorn-tree, which was taken from the duodenum. The two portions of intestine are parts of the duodenum, cut open to show the excessive dilatation of its coats, forming the two pouches, described below. The other gut is the rectum, showing an enlargement in it which appears to be from hardened *dung*. It was felt by me during an examination, whilst the animal was alive. It was situated on the superior part of the rectum. I have not attempted to cut into it, and, therefore, shall anxiously wait your opinion upon this singular and to me very strange state of the rectum. I will now describe the case. On

Tuesday the 26th December, I was requested to visit a valuable entire colt, rising two years old, for what was considered an attack of "gripes." The person who came for me said, that he had found the animal lying down in the field when he went to look at the horses in the morning: he, therefore, brought him down to the farm buildings, and wished me to see him. Upon my arrival I found the following symptoms present. Pulse scarcely perceptible at the jaw, but beating 95 at the heart; extremities of a deathlike cold; respiration quick and laborious; the animal *occasionally* showing symptoms of pain, by pawing with his fore feet, looking back at his sides, lying down his whole length, and rolling over upon his back; he would then rise, walk several times round his box, and the above symptoms would be again manifested. Whilst standing, he would now and then make efforts at vomition, which were followed by a discharge of fluid from both nostrils, very much mixed with masticated food, such as hay-chaff and light oats, such being the food the animal was allowed besides grass. The quantity of the ingesta discharged, became much greater when the animal's head was depressed. There was no particular distension of the bowels apparent, nor did the pain at any time seem very violent. The treatment that was adopted consisted in the employment of purgatives with stimulants, &c. Externally counter-irritants were had recourse to, no hope being held out to the owner of recovery. Upon making an examination by the rectum, I could distinctly feel a hardened mass, which was placed above the gut, but it did not appear to interrupt the passage of my hand in the regular tract, for I removed several pieces of hardened dung, which were very much covered with mucus. The animal lived only six hours after my first visit.

Post-mortem examination.—Upon opening the abdomen, I was very much surprised at the small amount of discoloration, while the distension was great. The bowels only here and there presented patches of inflammatory action upon their peritoneal covering, but the internal or mucous coat was very much more discoloured. The stomach itself was enormously distended with food, and the duodenum presented a very peculiar appearance, being filled with fluid and portions of aliment, which distended this intestine to nearly twice its usual calibre, and about six inches from the stomach this gut had *two large* pouches formed by the distension of its coats, arising from the presence of such a large quantity of the contents, causing almost a rupture. Following the course of this distended intestine for about five feet, I came at a hardened

mass, which I have sent you, composed of the berries and twigs of the thorn-tree, mixed with mucus, which had effectually closed the passage, and produced the symptoms that have been described. The case then appeared clear, and we can readily account for the symptoms which were shown. It is valuable in showing that great quantities of matter may be rejected from the stomach of the horse in other affections than those of rupture.

I have seen the above symptoms in one or two cases where death has been caused by mechanical obstructions in the intestine near the stomach, such as the above case; also in strangulation, intussusception, &c. The rectum seems to be an old affection, but I will wait your opinion upon the matter. The other parts of the abdominal viscera were healthy. The lungs were found to be highly congested. I have thus attempted to describe this peculiar and interesting case, and hope that it may be acceptable to the readers of the *Veterinarian*.

I remain,

Your obedient servant.

[The peculiarities of the lesions of the parts sent by Mr. Leech, are so well described by him that there is but little required of us in addition to his lucid account. The pouch-like portions of the duodenum had evidently existed for some time, and were seemingly the result of partial retention of badly masticated and imperfectly digested alimentary matters. It would be interesting to know how much of the cause of these dilations depended upon the animal's "teething," or indeed whether to this cause may not be attributed the whole of the mischief.]

The hardened mass spoken of as being situated at the superior part of the rectum, was found to consist of an accumulation of feculent matter, of about the size of the fist, and which had become very dry from long retention. The sack or pouch in which it was placed, communicated with the intestine by an opening which would admit the ends of three fingers; its edges were well defined and covered, as was the whole of the interior of the sac, by a continuation of the mucous membrane, but which gave no evidence of having sustained any injury whatever. We could easily, in our minds, account for the formation of this pouch on similar grounds to those previously alluded to. The case altogether is both a novel and very interesting one.]

HAIR BALLS IN THE COW AND ANTELOPE.

By R. H. HOLLOWAY, V.S., 2d Light Cavalry.

GENTLEMEN,—Within the last few days a small concretion, irregularly spheroid in form, was presented to me, as having been found in the large intestines of a cow. It had probably found its way there from the rumen. It possessed an external covering of the phosphates, was of a light brown colour, and in parts highly polished.

Upon making a section through the specimen, it was found to consist of a number of very regular concentric layers of hair matted together by means of earthy matters and mucus. Its weight was rather more than two ounces avoirdupois; length $3\frac{1}{4}$ inches, and diameter $1\frac{3}{4}$ inches.

The same animal was stated to have had a diseased heart; but of what nature, or the real cause of her death, I have not been able to gain any satisfactory information.

Rather a singular instance of a collection of hair balls occurred some time since in a tame antelope belonging to one of the troopers in the Horse Artillery, now at this station; and which died in consequence of them. No less than forty-six of these bodies, averaging about the size of a large horse chestnut, were found in its stomach. They were entirely spherical, and each had a thin phosphatic covering; one out of the number being very highly and beautifully polished.

Mr. Blaine writes, when adverting to these concretions, “they are said to be particularly frequent in the chamois goat, are called *cegagropila*; and in times of superstition and ignorance, these particularly were used in medicine as a species of bezoar.”

The light of the nineteenth century has not yet proved sufficiently brilliant entirely to dissipate these *original* ideas, for the owner of this antelope, together with some others who were present during the time the post-mortem examination was being instituted, expressed his thoughts that the highly polished hair ball was a *medicinal stone*, possessed of some marvellously curative properties!

I remain, gentlemen,
Yours faithfully.

ON THE INTESTINAL CONCRETIONS MET WITH IN THE HORSES OF MILLERS.

By C. PAGE, M.R.C.V.S., Banbury.

As several instances of intestinal calculi have lately fallen under my notice, I have thought a brief account thereof might not prove uninteresting to the readers of your Journal.

The older writers on veterinary medicine are particularly barren of information on this subject, which perhaps we might wonder at, inasmuch as the ancient physicians were conversant with the fact, that in the lower animals these concretions were occasionally met with. To them they gave the name of bezoars, and ascribed to them many extraordinary virtues. It is true they confined this term, at first, to such as were found in the stomach of a kind of goat, but afterwards it was extended to those met with in other animals and in other organs.

Oriental bezoars were formerly much extolled as medicinal agents, and we are told that in the East, a true bezoar, or *bezuar*, or *bezar*, was considered to be a stone found in the kidneys of the *cervicabra*, a wild animal of Arabia, partaking of the nature of the deer and the goat, but somewhat larger than the latter animal. The stone was supposed to be formed of the poison of serpents which had bitten the producer, combined with the counteracting matter with which nature had furnished it; and was resorted to as a charm against plague and poison.

Vague and indefinite were the descriptions given of the constitution of intestinal calculi, as found in the horse, until of late years. Blaine expresses no surprise that such should exist in the intestines of this animal, as his food abounds with siliceous matters. In his earlier editions, he remarks that millers' horses are especially the subjects of them, from their feeding on bran, &c., "the mucilaginous nature of which food concretes the minute siliceous particles detached from the grindstones." Other writers attribute the frequency of their presence in millers' horses to their being allowed to drink from the margin of the mill-pond, the water of which is kept in a state of constant agitation by the movements of the wheel; and hence stones, dirt, and other matters find their way into their stomach and intestines.

It unfortunately happens for this theory of their formation, that intestinal calculi are not constituted principally of silex, nor of an heterogeneous mass of these foreign substances;

yet is this statement repeated over and over again by Blaine, until we arrive at the last edition of his work. And still stranger, Mr. Percivall has fallen into the same error. After stating that the formation of calculi in the bowels of a horse should not surprise us, "when we know that, on occasions, not only is much dust swallowed with his food, but that the voracious feeder is disposed, whenever he has the opportunity, to lick up and swallow a great deal of dirt. * * * * Even in the stable, dusty hay is often given, and oats full of grit and fragments of stones;" he adds, "Millers' horses are said to be especially subject to these formations, from the circumstance of their food consisting principally of bran and mill-dust. The millstones must necessarily impart more or less of their substance to whatever they grind into dust or meal, and this gritty or calcareous matter it is which becomes afterwards the principal component of these concretions."

I do not mean to deny the truth of the statement that a voracious feeder will take into his stomach strange substances, but these do not aggregate so as to form the concretions met with in millers' horses so frequently. The Continental chemists long since analysed these accumulations, and found them to consist essentially of the ammonio-magnesian phosphate. Professor Morton, in his published 'Essay on Calculous Concretions in the Horse, Ox, Sheep, and Dog,' informs us that having examined one taken from the stomach of a horse, he found it to consist of "the phosphate of ammonia and magnesia, a small quantity of silica, and mucus;" and he afterwards satisfactorily traces these constituents to their source. "In the cereal plants certain of the phosphates are met with, and that, too, in somewhat considerable quantities; it is then *to the food* that we are to look for their origin, coupled with a morbid state of the digestive function;" probably, the succus gastricus not being sufficiently active, so as to dissolve these phosphates. In this view he is supported by Liebig, who states, in his work on 'Organic Chemistry,' that "phosphate of magnesia in combination with ammonia is an invariable constituent of the seeds of all the grasses. It is contained in the outer horny husk. The *bran* of flour contains the greatest quantity of it. It is this salt which forms large crystalline concretions, often amounting to several pounds in weight, found in the cæcum of horses belonging to millers."

I have purposely dwelt on this one particular formation, because it is in horses of millers that I have of late years found them, and they are all of the same kind. I am quite aware that differently constituted calculous concretions are met

with; but none of them can be correctly said to be made up of fragments of stones, or of dirt, or grit from the mill-stones; they are not, in other words, artificial conglomerate. These substances may occasionally constitute the nuclei, in common with nails, pins, &c.; and sometimes they may become accidentally incorporated in what is vulgarly called a "dung-ball;" although more commonly they are passed out with the fæces; or should they accumulate, they often become the cause of much irritation, which is followed by inflammation, and even death.

I feel I need not further particularise; indeed, by doing so I shall encroach too much on your valuable space. It will now be understood to what kind of concretion I allude; and, therefore, it only remains for me to give a history of the cases in which those calculi I have forwarded to you, Messrs. Editors, for acceptance, occurred. I have numbered them 1, 2, and 3, for the better understanding of my description.

The calculus marked No. 1, was taken from a horse that died not very long since. He was fourteen years old, and had been in the possession of a miller of this town nine years. It is a common custom with him to turn his horses out to grass every spring; and after two years this horse was so turned out, when he was observed to void a calculus, and he continued to do so every succeeding spring, except the last. (Calculus No. 2, is the last he passed.) He was frequently attacked with colic, beyond which he might be said to be a healthy horse. The attack of which he died took place last autumn. He was ill for three days, during which period he showed no acute inflammatory symptoms, but there was evinced a kind of dull pain, intermittent, and not so severe as spasms. There was a cessation of the action of the bowels all the time of his illness. I was quite satisfied he was suffering from a calculus, and that it produced a mechanical obstruction. There was much fetor from his mouth; he voided his urine freely; and he continued to stand up till he suddenly dropped down and died instantly.

The large intestines were perceived to be inflamed, but not anything like to such an extent as I have seen them in an acute inflammatory attack. I found no sacculus in them. The calculus was found fixed in a flexion of the colon.

Calculus No. 3, is one that was passed about two months ago, from a horse, the property of another miller in this neighbourhood, after a dose of physic had been administered to him. It was accompanied with little or no inconvenience. I shall watch this horse.

I have by me a calculus weighing eighteen pounds, taken

from a horse belonging to the proprietor of the Banbury Mills. He had been in his possession for nine or ten years, and had never been ill the whole time till the attack of which he died.

I have forwarded the specimens by train this afternoon to you.

I remain, dear sirs,
Yours truly.

[We thank Mr. Page for the concretions. They are precisely the kind he has described.

Calculus No. 1, weighs 6 lb. 13 oz. avoirdupois. Its form is globular, and it is much roughened on the surface. A section having been made of it, the nucleus is perceived to be a piece of stone, around which the phosphates are deposited in concentric layers, some of them being darker in colour than the others.

Calculi Nos. 2 and 3, weigh respectively 13 oz. and 5 oz. The form of each is round, and the surface smooth and polished.]

CASE OF SPASM OF THE MUSCLES OF THE GLOTTIS.

By J. B. DOBSON, M.R.C.V.S., Kettering.

EARLY one morning I was requested to attend a light-cart-horse, the property of a baker in this town. On my arrival, I was told that the animal had been taken out in the cart in the morning, seemingly in his usual health. On coming to a slight hill, however, he began to make a loud *groaning* noise; evinced all the symptoms of suffocation, and would have fallen had he not been immediately taken out of the cart. He was at once led home, and when I saw him he presented no symptoms beyond a somewhat accelerated pulse, and a good deal of exhaustion. On a careful examination, I could detect nothing abnormal in the respiratory apparatus, except eliciting the fact that the animal was somewhat of a roarer. I administered a sedative, and left him with the understanding that if anything unfavorable took place I was to be summoned. At night a messenger came saying the horse was ill again. Upon entering the stable the animal presented the following symptoms: he was stretched out all his length in the stable, apparently in the agonies of suffoca-

tion, and such was the difficulty attending respiration, that he positively *screamed* in performing the act, so as to be heard at some considerable distance. I had not been with him many seconds, however, before he was slightly relieved, and in about ten minutes the spasm passed off, leaving him, with the exception, of course, of great exhaustion, apparently as well as ever he was. Viewing the case as one of spasm of the muscles of the glottis, I applied stimulants, and ordered constant fomentations to the larynx, and left him with directions to be closely watched in case the "fit" might return. In the middle of the night I was again called for in haste, and this time the dyspnœa seemed, if possible, worse than before; and it was evident that, if no relief were afforded, the animal must soon become suffocated. I accordingly, with some difficulty, owing to his struggles, performed tracheotomy. The relief was instantaneous, and he was soon on his legs and anxious to feed. From this time the tracheotomy tube was kept in his throat for a week, when, considering that the glottis might have resumed its normal functions, I placed a cork in the orifice of the tube, and sent him to work as an experiment; ordering the cork to be removed, if any symptom of suffocation should come on. We, however, found that the slightest effort at exertion being made brought on a fit of dyspnœa, and it became evident he could not work without the tube. The horse was accordingly sent to his regular work with the tube in his trachea, and for three or four months he did his accustomed labour with it in. At the end of that time, however, by an accident, the tube fell out when he was some miles from home, and the horse coming home tolerably well without it, the horsekeeper neglected to inform me of it for a day or two; and when I saw my patient, the aperture in the muscles of the neck had closed. As the horse now seemed to work quite well without the tracheotomy tube, it was not re-inserted: and from that time to this (more than two years), he has not had another attack.

THOUGHTS ON INFLUENZA.

By G. ARMATAGE, V.S., Sheffield.

My last communication having been devoted to the description of symptoms in some of the most severe cases of "influenza," accompanied with intestinal irritation resembling

those effects occasioned by "enteritis," and in many, more like madness than some persons would credit, I now proceed to detail those symptoms which are observed in the apparently less severe cases, and which have proved as great a burden to the veterinary surgeons in this district as any "epizootic" has hitherto done.

The insidious manner in which this disease worms itself into the system,—if I may be allowed so to express myself—causes it to be a great difficulty to make owners in any way inclined to believe that anything serious is really affecting their animals. When they require our attendance, too, they can furnish but little in the way of answer to our inquiries. There is "no cough," "no cold," nothing stated only "He won't eat," or "He won't work well." This leaves us no alternative but to pursue our investigation unaided, and often sadly contradicted. This loss of appetite is mostly by the groom attributed to the "lampas," which the ignorance of many owners and grooms leads them to believe constitutes the "disease," and not the "symptom." I am sorry to see that, in the present advanced state of professional knowledge, this belief should be really encouraged by practitioners for the love of gain, and accordingly they prick, incise, burn, or otherwise mutilate the mouth of a poor unoffending animal.

This may be compared to the "shoulder lameness" of past years, which we now find mostly located at or below the knee, and we hope it will soon die the same "death," by which means the "groom" will not be considered to possess *the* knowledge instead of the veterinary surgeon.

To return. In a recent case there may be observed a slight appearance of colic, or it may be severe; and this is the first intimation of the animal's illness. This passes off by the administration of powerful stimulants, in large doses, yet obstinate constipation exists for one, two, three, or even more days afterwards. And as Mr. Barlow remarks in his paper,* to which I refer my readers, although this state of affairs exists, the bowels are strangely sensitive to the action of purgative medicine. The limbs, ears, and nose, are cold as death; mouth moist and cool; respiration little or not disturbed; breath cool; pulse ranging from 26 or lower, to 48, 56, 60, and even higher, and remarkable debility exists. Supposing now the pulse reaches the highest number named, and the respiration is accelerated, it may be mistaken for some inflammatory disease, but if treated as such the animal rarely recovers.

* Vide 'Veterinarian,' April, 1853, p. 223.

Little or no attention should be paid to the purging of the animal in the strict sense of the word; for in all cases which by this treatment slip through our fingers, we shall find the contents of the bowels fluid. Oft repeated doses of strong stimulants, and linseed oil as a laxative, with small quantities of the extract of belladonna, form the basis of correct treatment, coupled with friction to the ears and legs, bandages, and plenty of warm clothing. It may be safely depended upon, that while the pulse rises so rapidly nothing but powerful stimulants will bring it down, as the case, from beginning to end, is one of debility.

In other cases, a painful cough presents itself; the throat is sore, and deglutition difficult; soreness is also evinced on pressing the intercostal spaces; groans are emitted during the animal's gyrations; he seldom or never lies down; the dung is fetid, slimy, and often voided in small hard quantities, or diarrhœa may be present; the urine is high coloured; there is great inequality of heat; the appetite may or may not be absent, and in some cases it remains quite good. All these symptoms may exist in the foregoing case. The pulse is about the same, either full, soft, slow, and weak; or quick, small, weak, and wiry; the eyes are dull and bloodshot.

In a third variety these symptoms are more aggravated. The appetite is very capricious, or quite absent; the pulse smaller and weaker, in fact it has become a running down pulse;* the animal stands propping himself up, for weakness to an extreme degree is manifested; and partial or entire paralysis is present; if the latter, he may have fallen during the night, and in his struggles rendered himself a mass of frightful bruises. (In the first stages paralysis has often come on in the night, after the animal's being left, prior to which nothing was visible to the owner indicating indisposition.) The breath is fetid, respiration laboured; the animal scrapes with his fore feet; the legs, ears, and nose, are cold as ice; the bowels quite inactive; and the mucous membranes either blanched or yellow. If the spinal cord be unaffected, this state of affairs goes on for a week or more, according to circumstances, when the pulse becomes imperceptible at the jaw, the mouth dry, the tongue flabby and pendulous, the eyes closed, the head held low and near the ground, in fact coma more or less exists, and the animal is insensible to all surrounding objects and things, except the twitching pains of the abdomen; he scrapes two or three times, crouches towards the ground, and then all subsides into perfect stillness; the breathing becomes stertorous, and liver-coloured

* Spooner, on 'Influenza,' p. 88.

granules, floating in a thin mucus, flow slowly down the nostrils. In cases so far advanced as this I have allowed the patient perfect liberty in the straw-yard; when, after turning round several times like a dog, he lies down, and, giving some few groans, expires.

In some young, robust animals, tumours form under the lower maxilla, and suppurate tardily. In others, abscesses exist in the guttural pouches, which is the most frequent kind of suppuration. But in whatever form influenza shows itself, the lungs, upon auscultation being resorted to, will be found to participate. If the pulse be appealed to, either oppression, or other signs of debility, will be clearly shown. The respiration may seem to be undisturbed, but if the attentive observer stand a little behind and on one side of his patient, he will observe that a peculiar motion of the flanks is visible, and a long line of constriction or "tucking up" extends from the flank to the sternum, corresponding to the lower margin of the obliquus externus abdominis. This is done to render the ribs a fixed point, and to mitigate the friction within the chest, and it may be present on one or both sides. Upon applying the ear, the sound of the heart beating may be heard like a "dull heavy thump, having a peculiar vibration, indicating effusion; or it may be altogether inaudible from complete congestion or hepatization of the lungs. Percussion fully ratifies these conclusions. Effusion sometimes takes place within the pericardium, giving rise to an intermittent pulse; then the lungs seem only to participate partially, but pleuritic tenderness is clearly demonstrable both by the abdominal constriction and on slight pressure being applied; also by the careful inspirations and the groans made in turning. When the breath is extremely fetid, one or both the lungs may furnish the cavernous *râle*. I have met with it in several cases which have been of long standing and neglected.

During the time in which I have particularly noticed this disease, in this district, I find "strangles" in young horses has either been greatly modified in its character, or, in the majority of cases, has given place to it, and, as it were, becoming latent, developed itself at a distant period in a more virulent form of influenza, in which the greatest debility exists. Suppuration tardily takes place in the submaxillary glands, or guttural pouches, the shoulder, rectum, groin, mesentery, or thorax; or, in fact, it may prove to be glanders.

In those animals which have died from that form of constipation already noticed, and when coma was present to a greater or less extent, clots of venous blood have been found

in the brain, and all the coverings of the nerves which go to the lungs and intestines were greatly congested. Therefore we need not be at a loss to account for the fluidity of the contents of the bowels, after the quantity of purgative medicine administered, or the insensibility to its action, as exemplified by the small amount of pain present in that stage. The spinal cord is congested, and effusion takes place, thus causing the paralysis that accompanies this complaint; and proportionate to the degree of effusion so will be the loss of power.

(*To be continued.*)

ANASARCA, OR LOCAL DROPSY.

By C. LAYCOCK, V.S., Selby.

GENTLEMEN,—Not remembering to have lately seen recorded in the pages of the *Veterinarian*, or particularly treated of, a disease to which the horse is liable, termed by the profession “local dropsy,” but more commonly known to the agriculturalists of this district by the name of “water farcy” or “dropsy of the skin,” I therefore presume to address you, not for the sake of “sounding my own trumpet,” but to get information, hoping that some one, better able than myself to handle the subject, will take it up. It would be superfluous in me to describe the symptoms of this complaint, for I have no doubt the disease is as old as the history of the horse, and has doubtless come under the notice of every veterinary surgeon. The best mode of treatment I have adopted is, first to place the patient in a warm and comfortable box, avoiding a cold stable as the greatest evil, and instead of water, give as much—

Infusum Genistæ (fol., flores, semin.), et
 „ Cytis. Scoparii,

warm, as he will drink. Also occasionally administer a little tonic, aperient, and diuretic medicine, and cause the food to consist of good hay and dry oats, always paying particular attention to the animal's being housed warm and comfortable, as already advised. By adopting this treatment I have generally, after a long and tedious trial, been able to succeed in effecting a cure. In low and marshy districts, yearlings are most subject to this disease, but age does not exempt an

animal from its attacks, especially when weak and in low condition.

Local dropsy of the cellular membrane, and particularly that enlargement beneath the thorax which has the strange appellation, in some parts of the kingdom, of "feltoric," has none of the characteristics of real farcy; it is general debility, to a greater or less degree, and not inflammation of the absorbents. Youatt says that if properly treated it soon disappears, except that occasionally, at the close of some serious disease, it indicates a breaking up of the constitution; but he never once hints at any particular mode of treatment. The fact is, it is very difficult to manage, and in some counties it proves very fatal, therefore I think there is still much to learn respecting it.

Should you think this communication merits a place in the *Veterinarian*, possibly it may meet the eye of some talented veterinary surgeon who will not think it beneath him to enter more fully into the nature, causes, and treatment of this disease.

I am, gentlemen,

Yours obediently.

DISEASE OF THE SPLEEN IN CATTLE.

By R. P. FOSTER, Spalding.

On the 24th of August last I was sent for to examine a bullock that had died very suddenly, it being found dead in the morning, and this being the second that had so died within two or three days, and that without any symptoms of illness being manifested, the owner was anxious to ascertain, if possible, the cause of death.

Post-mortem appearances.—Upon laying open the cavity of the abdomen, the intestines and internal organs generally presented the appearance of being spotted with blood, and, indeed, I at first thought this was the case, arising from the rupture of some vessel; but upon trying to scrape the spots off, I found they were covered with a thin membrane, and consisted of extravasated blood. The intestines otherwise were healthy, except in one place, which I shall notice hereafter. The lungs were gorged with blood. The cavities of the heart contained no coagulum, and but a very small quantity of blood in a semifluid state. The auricles on their superior surface showed some patches of black extravasated blood.

A part of the liver was of a greyish colour, and softened in substance. The gall-bladder was unusually full of bile of a blackish green colour, and very thick. The urinary bladder was about half full of fluid, of the same colour, but not quite so thick as that in the gall-bladder. The substance of the spleen was reduced to a semifluid state, and was of a livid red colour, and weighed 14 lb. The rumen and maniplus were full of ingesta; the epithelium was easily separated, and the surface from which it was removed had a red streaky appearance. A portion of the intestines, about a foot in length, contained a quantity of fluid resembling the state to which the spleen was reduced.

The other beast, which I also had the opportunity of seeing, presented precisely the same appearances, except the spots on the bowels. After having satisfied myself with the examination of the dead, I accompanied the owner to the field to see others that were living, and among them I thought I saw one a little ailing, but could scarcely speak positively, as the beast was so much tormented with the flies, which the oldest man cannot remember ever being so troublesome before. I told the owner he had better watch this animal in the evening when the flies were gone, which he did, and about 9 p.m. I received a message to attend, as there were three more animals ill, namely, the one I had pointed out and two others. When I arrived, the symptoms presented were a staring coat; backs arched, with a stiffness and unwillingness to move; pulse about 60, and rather oppressed; and a little saliva flowing from the mouth. I bled two of them (the worst), and gave all of them a dose of aperient and febrifuge medicine, and left them in the yard for the night.

The next day, before I arrived, one had died, and another being nearly dead, was killed, as was also the other. Now, as there appeared to me to be but little chance of a cure being effected after the disease had developed itself, I advised the owner to have all his cattle attended to, so that we might, if possible, prevent any more from falling into this state. He did not, however, consent; when some few days afterwards my services were again required to five cows, two of which had failed in their milk, and were looking very thin. They were frequently lying with their heads back upon their sides, and the throat was swollen. I gave them as follows:

℞ Aloës Barb., ʒiij;
 Zingib. Pulv., ʒj;
 Potassæ Nit., ʒj;
 Magnesiæ Sulphas, ʒxij;
 Pul. Corticis Peruv., ʒj;
 Aquæ, q. s. fiat haustus;

and applied to the throats the following liniment :

℞ Liq. Ammoniae fort.,
Ol. Tereb.,
Ol. Lini, aa part. equal.
Misce fiat linimentum.

On the next day I found them a little better. I repeated the medicine, and in a few days they were all recovered.

A short time after this, one of three yearlings was found dead. My attention was then directed to some others, and to them I administered the same kind of medicine as that already described, under which treatment they all recovered. After this, two others were taken ill, and after having only one dose of medicine each, they died in two or three hours, making, I think, nine that had died. After this, those that were anyway suspicious were sold to the butchers, as they were all, except the cows, and the three just mentioned, feeding beasts from three to four years old.

Remarks.—My opinion is, that they died from disease of the spleen, this being brought on by the long-continued hot and dry summer. The pasture was very short until the rain in July, which caused the eddish to grow very fast; and as the feeding beasts were none of them ill before going to the eddish, the probability is that the blood was in a vitiated state, and when thus brought into a luxuriant pasture, and being irritated by the flies, congestion would be caused, and death.

With reference to the case adverted to by Mr. Cherry, I beg to say that in the first instance it was supposed to have been a bruise caused by the mare running away and coming in contact with a gate. This might have been the case, although there was no abrasion. A rowel was inserted, and, some little time after, the animal came under my care, when I applied fomentations, and subsequently a blister, which had no good effect. I then wanted to dissect the mass out, to which the owner would not consent, but said I might try to disperse it. Now as I thought it to be an enlargement of the thyroid gland, bronchocele in fact, I determined upon using the compound iodine ointment, but it proved of no benefit whatever. I therefore again blistered it, and with the same result. I then passed a seton through it, which remained in for a long time, and discharged well; but all was to no purpose. After the seton was taken out, however, and the wound healed, it began to enlarge very much, and continued to increase in size until I operated upon it; and it was not until then that I thought it to be of a cancerous nature.

If I have not made myself, in this description, intelligible, it is through fear of trespassing too much on your valuable space, and not from any desire to withhold information.

DISEASES INCIDENTAL TO ANIMALS IN AMERICA.

By J. HARKNESS, Saint Louis, Mo.

GENTLEMEN,—My only apology for addressing you is the hope that I may be able to contribute something, however little, to veterinary science. I am not a veterinary surgeon by education, as you will no doubt soon discover. My partner, Mr. Glasgow, and myself, keep about 125 horses, and these are as many as I wish to attend to. I have been a subscriber to the *Veterinarian* for three years, and would have sent you some account of the cases that have occurred in my practice, but was deterred because I could not do it in scientific language, and therefore do not expect you to *publish* all or anything I may write you, but to use it—if it should be worth anything—in any way you like, to promote the interest of the *Veterinarian*.

There has never been an epidemic that I am aware of among our domesticated animals until early this year, when the *influenza* broke out among our horses, and *anthrax*, accompanied with fever, in our cattle. The first case I treated died, and as he was the first I had lost out of three of our own horses, I felt disappointed with the mode of treatment; and hearing of Mr. Ernst Lehman, a graduate of the Royal College of Berlin, who had just arrived in this city, I got another German doctor to interpret, when I soon found that he was a man of superior education, and a good practitioner, having been six years veterinary surgeon to a regiment. I furnished him with medicine, and introduced him to all my customers that had cases of influenza. In return, he told me how to treat my own cases, which I did with great success, not losing 5 per cent. But my *protégé* could not stand so much prosperity: he died of apoplexy before the summer was over. The principal remedies used by him were sulphate of soda, juniper berries, tartar emetic in *large doses*, hyoscyamus, camphor, and blisters.

I was once called to see a case of *traumatic tetanus*. The patient was in such a state that considering there existed no hope of cure I ordered him to be shot; but Lehman told me

that he had seen several very bad cases cured at the College in Berlin, and that he should like to try the effect of the medicine there used, could it be got, namely, *fætid animal oil*, Dippel's oil of the American Pharmacopœia.* We gave him one ounce in four doses every twelve hours. The first ball was with very great difficulty given, as the jaws were not more than an inch apart. The second was more easily administered, and the third still more so, while the fourth was given without any difficulty whatever. A little diuretic medicine was afterwards exhibited, with plenty of bran mash, and in ten days the animal went to grass and got into prime condition. This is the only case of tetanus I have ever seen cured. The disease is very common here, and runs its course in from ten to forty hours.

I am now trying the *corm of colchicum* in ophthalmia, which is a terrible disease in this climate. It seems likely to prove beneficial in four cases now under treatment. Our worst diseases are pneumonia, pleurisy, colic, enteritis, founder, tetanus, shoulder lameness, and spavin. I have only seen one case of ringbone in twenty years. Big head and big jaw are diseases not known in England. Fistulous sores are very common. And to this list of maladies I have now to add influenza and anthrax fever. These latter, being new diseases in this country, have carried off a great many horses and cattle this last summer. I find the *Tinct. Calendulæ officinalis*, made in the proportion of half a pound of the flowers to one gallon of alcohol, the best application for wounds that I have ever used. It coagulates the blood in deep wounds, and is superior to collodion for superficial wounds. I have to give larger doses of medicinal agents, and to exhibit them more frequently than you do in England, particularly in inflammatory diseases.

I am, yours truly.

* Dippel's oil is procured by the destructive distillation of albuminous and gelatinous substances of animals. Ammonia is its leading constituent. It is an empyreumatic oil, passing over of a pale yellow colour, and gradually becomes darker and thicker. Redistilled with water it is nearly colourless, of a penetrating odour, and acquires a brown tint by exposure to air. It is alkaline, soluble in alcohol, inflamed by nitric acid, but if this be diluted it becomes resinous; soluble in hydrochloric acid, and precipitated by sulphuric; also by the alkalies in an altered and apparently resinous state.

It was examined by Unverdorden, who found in it no less than four distinct substances, which he considered *salifiable bases*. 1, *Odorin*. 2, *Animin*. 3, *Olanin*. 4, *Ammolin*. Unverdorden also describes another salifiable base, which he obtained from animal empyreumatic oil, termed *Krystallin*. Some of these so-called *educts* have been supposed to be *products* resulting from the processes to which the oil is submitted for their separation.—EDITORS.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,
Lecturer on Veterinary Medicine and Surgery, London.

(Continued from p. 93.)

CONTAGIOUS ERUPTIVE DISEASE OF THE GENITALS IN THE HORSE; *Maladie du Coit* of the French; *Beschl  krankheit* of the Germans.—It may very justly be asked in what way does this disease, the symptoms of which were given at length in the *Veterinarian* for last month, differ from syphilis in man? Is there any relation whatever between this and that? Both local affections, with a tendency to invade the system, to spread unremittingly, unless checked by treatment, and preeminently contagious! Hertwig, Rodloff, Prince, and Lafosse, having observed and experimented, assert that mares infect stallions, and *vice vers  *. The year before last, Prince and Lafosse, in the School of Toulouse, settled this question. Of two stallions exposed to the contagion, one became affected and died, and of fifteen mares covered by the infected stallions, eleven contracted it, and several of them died.

Strauss, of Vienna, it seems incorrectly, regards the affection exclusively as due to the artificial state in which stallions are kept; that it is of spontaneous origin, a strictly constitutional affection amongst deteriorated breeds of horses: but Rodloff opposes this notion by saying that in Prussia the stallions are cross bred between Arabs and English, and that they are by no means badly kept.

According to Rodloff, hereditary predisposition, a catarrhal state, and still more, permanent or habitual exanthematous eruptions, signs of a lymphatic dyscrasia, combined with the act of copulation, determine, by awakening the general sensibility, by the friction of the sexual organs, the primary evolution of the malady in stallions and mares. We must admit all this as purely conjectural, and rest with what he more convincingly asserts and supports, that it is a sporadic, and not an epizootic affection. As indicating its fatal nature and transmissibility, Rodloff quotes a phrase from the '*Feuille hippologique*' for 1842, in which is described the stud of Count Peter Pejacsewich, situated near Numa, in Hungary. It is there said that in the preceding year (1841) the Count sustained immense losses from the

malignant disease of the genitals; five English stallions and a hundred and fifty of his own produce (I expect this must include mares) died of it. It appears that covering too many mares does not influence the development of the disease, and that the reiterated awakening of the venereal organ, without satisfying it, induces inflammation of the testicles in stallions, and cerebral affection in mares.

The Arabs and even French soldiers in Africa, have a bestial notion that if affected with syphilis connection with a female ass will cure them; or what is more infamous still, that seducing a young virgin, is the most efficacious means to arrest its progress. I need not enumerate a whole list of diabolical crimes that disgrace the less civilized of our race, but have alluded to these facts as in a letter from General Daumas, Director-General of Affairs in Algeria, to Magne, Professor in the School of Alfort, the opinion is emitted as it has been entertained by several that the contagious disease of the generative organs, which has been the cause of a frightful mortality amongst the horses of some Arabian tribes, found its origin in the transmission of the syphilitic virus from man to animals.

Leblanc strongly repudiated this notion before the Parisian Central Society, grounding his remarks on incontestible proof, he says to have obtained, that the syphilitic poison of man excites no disease if inoculated in the horse.

I do not mean to defend the notion of any identity between the chancres of the genitals in animals and those in man, but thanks to Auzias-Turenne, it is positively demonstrated that from man to animals, and animals to man, syphilis may extend.

The question is such an important one that I offer no apology for the translation here, of a short chapter from Sperino's work on syphilisation; a work which, even if it ultimately proves, as we have no reason to expect it will, based on false views, and mistaken observation, must inevitably perpetuate its author's name for the ardent love for inquiry displayed, the dispassionate research in quest of truth, and the noble, forbearing manner with which he supports the bitter opposition from within and without the Sardinian frontiers.

Is syphilis peculiar to the human species, or is it communicable to the lower animals? "Almost unanimous," says Sperino, "till lately, medical men admitted the non-transmissibility of syphilitic diseases to brutes. The unsuccessful inoculations of Hunter, of Turnbull, of Ricord, of Castelnau, had consolidated this ancient belief. Towards the close of 1844, M. Auzias-Turenne read a memoir before the Academy

of Sciences in Paris, in which it was announced that he had succeeded to communicate, by inoculation, syphilitic ulcers to the monkey, the cat, the rabbit, and dog. The scientific curiosity of French syphilographers thus awakened, some of them undertook to repeat the experiments of Auzias-Turenne : amongst others MM. Castelnau and Cullerier recorded the results obtained, and both agreed in not having communicated in any way the syphilitic ulcers to any of the lower animals. Auzias did not despair, even after this discouraging publication ; repeating the experiments, he convinced himself of the possibility to transmit syphilis to the brute creation, by observing certain necessary precautions. He laid before the members of the academy two monkeys in which ulcers had formed, bearing all the characters of Hunterian,* secreting pus, the inoculation of which gave origin to ulcers of a similar nature. Notwithstanding all this, he had not been able to inspire, in the greater part of his colleagues, that certainty, that conviction, which he had hoped. It was necessary to have a decisive, peremptory experiment, to set at nought those who would not believe in it. If the inoculation of the pus of an ulcer produced on a brute would cause the development of a similar ulcer on man, the question would have been solved. Auzias therefore appealed to all who believed in the localization of the primitive signs, that in the interest of science they should submit to the essay. For a long time no one obeyed the voice, till Professor Weltz, in 1850, decided to attempt the proof on himself. Having taken pus from ulcers developed on a monkey, and on a cat, he inoculated himself in four places on the arms, and in all four he obtained the specific ulcer with all its characters, which he allowed freely to develop for the first ten days, after which he cured them by repeated cauterization."

"In the following year, Diday (of Lyons) inoculated himself on the penis with pus from a primitive ulcer in a cat ; the inoculation was followed by an ulcer which became phagedænic, and gave serious apprehensions to this courageous and distinguished colleague."†

"With these facts, no adverse criticism can avail. Hence-

* Some of my readers may not know what is a *Hunterian chancre*, not having to study the diseases of man ; it is a syphilitic sore with indurated edges and base, the hardened swelling around and beneath it due to a *peculiar plastic effusion* ; it differs thus from the *simple chancre* or *chancrous excoriation* and the *phagedænic* or *sloughing chancre*, peculiarly destructive and dangerous.

† Here Sperino, gives a long note, in which he says, that Sigmund, Clinical Professor of Venereal Diseases, in Vienna, obtained positive results from the inoculation of the virus in all warm-blooded animals, and in the dog,

forward it will not be tenable by any one, that syphilis is a disease peculiar to man. It is well to observe though, that Auzias-Turenne generally found difficulty in the first transmission of the pus from man to brute, but once an ulcer was formed on the latter, the pus secreted would then more readily induce the formation of other ulcers on the same animal, or others of the same species."

M. Delafond, in the discussion which ensued after the letter of General Daumas was read at the Central Society, said that the establishment of a certain relation between the *maladie de coit* and syphilis of man could not be avoided. Like in syphilis, there were pustules and a discharge from the vulva and penis; like syphilis, it was contagious, it became constitutional; lastly, it appeared in the last stages with much the same symptoms as farcy and glanders, diseases peculiar to the horse, but which bear some analogy with the phthisis which is seen at the last stage of syphilis in man.

Delafond's opinion is entirely hypothetic, there is no relation whatever that we can understand between glanders, and farcy, and phthisis; between phthisis and the lesions of the respiratory passages in syphilis in man. Ulcers on the nose, like cutaneous syphilitic eruptions, have been witnessed in the horse after the inoculation of the virus. It must be learned what exact relation these hold to the syphilides and syphilitic sores of the nose, throat, and larynx, seen in man. We certainly have not sufficient data to come to any weighty conclusion as to the nature of the malady under consideration. Rodloff vaguely asserts that "a depression in the reactive powers of the nervous system, a proportionate disturbance in the functions of nutrition and reproduction, leading to cachexia and marasmus, constitute the characters of the contagious disease of the generative organs in the horse, and to compress the whole in a few words, it might be termed *a nervous phthisis*." Like all attempted definitions, faulty, this is peculiarly so, because not based on a thorough knowledge of the value of the words adopted, and clearly implying that the pathognomonic signs and characteristic organic lesions have not been carefully observed and wisely interpreted.

Hering, in his usual laconic style, speaks of the organic lesions discovered after death as consisting, besides the local and superficial signs of the malady, such as ulcers, &c., of the

the rabbit, and horse, the primary symptoms were followed by a cutaneous syphilide. After this, Sperino cites an experiment, not at all conclusive, because performed on a glandered horse. It appeared certain, however, that he had produced syphilitic chancres with indurated bases.

mucous membrane of the genito-urinary apparatus, and of the respiratory passages, mostly pale and covered with altered mucus, rarely with ulcers; the lymphatic glands generally are more or less swollen; the testicles brown and soft; the blood black and thick; the fat is converted into a pulpy mass; in rare cases there is inflammatory redness of the membranes of the cord, frequently watery effusion in the spinal canal, the nervous tissue of the marrow is softened, especially in the lumbar region.

Treatment.—Rodloff says there are three things indicated :

1st. To favour the secretions and excretions of the alimentary canal, to excite especially the portal system.

2dly. To awaken the energy of the vascular apparatus; improve the process of sanguification and condition of the blood; attempt thus to activate assimilation; bring back to the healthy state the functions of the skin and secretory organs.

3dly, and before all, reanimate the nervous system, the regulator of all the functions, specially attending to the posterior portion of the spinal cord.

Discarding mercurials and antimonial preparations, Rodloff exalts the use of ammoniacal salts, diffusible stimulants, camphor, iron, aromatics and bitters, mucilaginous substances and iodine to the external swellings, with strict attendance to hygienic measures. Here some remarks follow on castration tending to check the malady, or rather to afford precious time for its treatment. Stallions affected by the disease are disqualified for a period of three years in Prussia, and the proprietor cannot sell him, so that even in the case of an exceptional stock-getter, it must appear advisable to turn him to good account as a gelding.

The sanitary measures enforced by law relate to the prevention of intercourse. The separation of diseased animals, and usual means in epizootics to disinfect localities, are of no use, as it is only by direct contact in coition that the disease spreads.

Simon and Erdt, in the *Berlin Magazine* for April, 1855, attempt the demonstration of some relation between glanders, farcy, and the disease in question. They are somewhat convincing in their arguments; but how many cases considered glanders have not the slightest approach to it? The question rests on the certainty of diagnosis in either affection, and the careful study of their morbid lesions.

ON CERTAIN COLOURS ASSUMED BY MILK UNDER VARIOUS CIRCUMSTANCES.—Living in London, when blue milk is spoken of, a natural inference is that it is adulterated.

Chalk, treacle, and a host of other substances have been supposed to be extensively in use, by some writers, without proof positive as to their having been discovered; but they serve the purposes of rhetoric, of those writing eloquent tracts and books on adulteration, to excite more and more the disgust and fears of a defrauded public. The practice I know for a certainty to be adopted is that of extensive dilution, especially on Sundays, when the labourer teas with his wife, and when the lower classes indulge in puddings. By adding water to milk, a cerulean hue is rendered distinct, owing to its natural opaline colour becoming more manifest, the dilution also detracting from its thick opaque look; in fact, it looks watery. The London cow-keeper avoids this, by adding a little burnt sugar, which of all substances, next to water, is the most in use. It gives the solution a rich look, and counteracts the opalescent tinge. Let every one believe, to their consolation, that chalk mixtures entail more trouble, greater expense, and greater risk of detection, than simple dilution and innocent colouring. The mortality amongst the London cows, owing to improper management, is such, that nothing but the water-rate could save the whole milk-vendors of London from becoming insolvent; whereas, living on the fruits of the latter, they thrive in business and accumulate riches.

As it is my object to bring subjects up to the day I am writing, in noticing an article by Dr. Quidde, in the *Berlin Magazine* for last April, it is essential my readers should be informed of certain observations which have been made, and experiments successfully carried out, on the perversions of milk.

It has been repeatedly observed by agriculturists, veterinarians and others, that under some circumstances the milk of a natural aspect on being drawn from the udder, speedily assumes a special colour, most frequently blue; sometimes yellow, green, and pinkish or red. With reference to pink milk, it is generally due to admixture of blood, and is therefore associated with a diseased condition of the mamma. Parmentier and Deyeux, at the latter part of the last century, after having fed a cow on madder for six days, saw the milk acquire a pink colour, and perhaps other vegetable substances of the kind might induce the same thing, but in a state of nature such cases are very exceptional, and when milk is coloured red, the usual unmistakeable inference is, that in it there is hæmatine.

The blue milk, properly so called, becomes blue on the separation of its cream; light blue specks appear on the surface of the latter, extending right and left to the complete

coloration of the whole constituents of the milk, which now emits an acid odour sometimes approaching to fetidity. Either butter or cheese made of the cream soon becomes mouldy, with the development of parasitic animals and vegetables.

Delafond, from whom I am largely borrowing in these remarks, says that this condition of milk is only seen in the spring, summer, and autumn, never in winter. The cows are in health, the mammæ likewise, the milk then changes in consequence of some cause extraneous to the system.

Hermstbädt first thought it was due to cows feeding on plants containing indigo. Parmentier and Deyeux, in 1815, Braconnot in 1836, and Bailleul in 1843, emitted the opinion that it was a cryptogamic plant coloured the secretion, and Braconnot thought it was the *bissus cœrula*. Professor Fuchs of the Veterinary School of Carlsruhe, at last discovered that an infusorial animalcule, a vibrio, which he called *vibrio cyanogenus*, produced the blue colour, and the number of these animals in a single speck is incalculable. Fuchs has approximatively reckoned that 40,000 would be required to cover a square line. Placing a drop of the coloured milk with some that is normal, this speedily experiences a similar change.

Here it is I have to quote Dr. Quidde's article treating on the causes of blue milk. He says, that from observations carried out in various localities, he is persuaded the milk of cows readily acquires the blue colour when the cows have been fed on bad food. Marred and mouldy clover, musty hay, spoiled fermenting grains all leading to a perverted condition of the blood, hence of its secretions; the milk acquiring a special tendency to ferment, and constituting a favorable site for the deposition of germs and development of infusoria. This is especially seen in those dairies in which there is little ventilation and a peculiar tendency to the accumulation of germs. Experiments have, moreover, proved that pure milk from healthily nourished cows, even if placed under the same conditions, that is to say, in ill-ventilated dairies, as that becoming blue, does not become discoloured. Quidde, therefore, concludes that badly feeding the cows, and the milk being allowed to stand in foul chambers, or kept in dirty pans, are the two reasons accounting for the development of the *vibrio cyanogenus*.

There is *yellow milk* as well as blue, and this has been attributed also to cows feeding on vegetables, containing a yellow colouring matter. Fuchs, however, has discovered in this form, also, that a yellow vibrio is developed which he calls the *vibrio xantogenus*.

Berthollet and Paulini have observed the milk green, and it is supposed this is due to a mixture of blue and yellow milk. Fuchs believes there is a coïtaneous existence of the blue and yellow vibrio.

16, UPPER WOBURN PLACE.

(*To be continued.*)

PATHOLOGICAL SOCIETY OF LONDON.

LATELY at a meeting of the Pathological Society of London, Mr. Partridge exhibited nearly a dozen RENAL CALCULI taken from an ox. They varied in size, the largest being about the size of a small nut.

From an analysis made by Mr. Bloxam, of King's College, they were found to consist principally of carbonate of lime, and albuminous matter, with a trace of alumina.

Also, a DOUBLE ŒSOPHAGUS OF A SHEEP, which, on a post-mortem examination, was found to commence at the top of the gullet, and extend to the entrance of the stomach. No symptoms were noticed to arrest attention before death, and the age of the animal was not known by Mr. Partridge.

SCABS ON THE MUCOUS MEMBRANE OF THE COLON IN THE HORSE, ASSOCIATED WITH SUBMUCOUS CYSTS, CONTAINING CALCAREOUS PARTICLES.—The horse in which these lesions of the intestines were found was old, emaciated, and low, suffering from herpes phlyctænodes, a very common affection in the horse, associated generally with no constitutional disturbance. On post-mortem inspection, the posterior lobe of the right lung was found hepatized; and over a very large surface of the mucous membrane of the transverse colon, especially corresponding with the longitudinal muscular bands, were dark-brown or greenish-coloured scabs, of considerable thickness, and very firm; the membrane beneath them was tumefied and inflamed. In the sub-mucous tissue were discovered numerous white little cysts, containing spherical, granular, dark-coloured, earthy masses, which were dissolved with effervescence by hydrochloric acid. These were in many particulars similar to the calcareous bodies met with in the choroid plexuses, differing from them in being tuberos, more opaque, and containing less phosphates, and more carbonates.—*Lancet.*

Facts and Observations.

ON METHYLATED SPIRIT OF WINE.

WE know no valid objection to the methylated spirit of wine being used generally, by the members of our profession, in their pharmaceutical compounds.

The compound which is now sold under this name, at a price about one third of that paid for rectified spirit of wine, consists of wood naphtha, or pyroxilic spirit, added to spirit of wine, in the proportion of one part of the former to nine parts of the latter. The object which the government authorities have had in view, is to allow of the use of a fluid for scientific and chemical purposes free of duty, and at the same time, by admixture, to prevent its being resorted to for drinking purposes; so that the revenue may not be seriously affected by the act. This is both wise and liberal, and there is no doubt that the result will prove a boon to many manufactures, and that many pharmaceutical compounds will be lessened in price by it. Already ether and collodion are made from it of excellent quality, and other compounds we may confidently hope will quickly follow.

It is now several years since, that the pyroxilic spirit alone was employed by us as a solvent for the gum-resins, and found to be an admirable topical application for wounds, abrasions, &c. Its use as an internal remedy has also been often suggested by us.

A disposition to group or classify substances seems to have obtained among chemists of late years. Among the compound substances so arranged, we find what are called the *ethyle* and *methyle* series, not here to speak of any others. These may be viewed as organic bases, or compound radicles, consisting of carbon and hydrogen, and by their combining with oxygen, chlorine, iodine, &c., they form a class of substances analogous to haloid salts.

Alcohol, or spirit of wine, belongs to the *ethyle* series; corresponding with which we have *methyle* series, to which pyroxilic spirit belongs.

Methyle is a compound of $C_2 H_3 = 15$. *Symbol*, Me. Its *oxide*, or *methylic ether*, is obtained by the action of four parts Acid. Sulph., on one part pyroligneous spirit, aided by

heat. The evolved gases are to be collected over mercury, and will be found to consist of the oxide of methyle, mixed with carbonic and sulphurous acids: these last are to be abstracted by potassa, or milk of lime.

Oxide of methyle is a colourless gas, of an ethereal odour, inflammable, burning with a pale, blue flame. Sp. gr. 1.59, and is not liquefied at 0° . *Composition*. $C_2 H_3 O = 23$, or $Me. O$. It is thus seen to be isomeric with alcohol, the difference being dependent upon the different densities of their hydro-carbon, the H, C, which form 1 atom of alcoholic hydro-carbon, forming 2 atoms of methylitic hydro-carbon.

Pyroxilic alcohol, or *wood spirit*, *alcohol of wood*, or the *oxide of the hydrate of methyle*, $C_2 H_4 O_2 = 32$, or $Me, O, + HO = 32$, is the result of the distillation of wood in the formation of acetic acid. Of this compound a very variable portion passes over, not amounting on an average to more than 1 per cent. It has to be re-distilled and rectified over lime, when it occurs as a limpid liquid of a peculiar odour, resembling alcohol, and acetic ether. Taste, hot and pungent, something like strong peppermint; inflammable, burning with a pale flame; boils at 150° , and mixes in all proportions with water, ether, and rectified spirit. Sulphur and phosphorus are to a certain extent, soluble in it, and it dissolves the resins; hence, it may be used as a substitute for alcohol. It is a powerful antiseptic, and has been found an effective preservative of subjects for dissection. It may likewise be used as a therapeutic agent.

The only instance which we are acquainted with of pyroxilic spirit having been given internally, has been communicated to us in the following note:

TOWYN, NEAR MACHYNLLETH.

Dear Sir,—Remembering your suggestion, when a pupil, of the desirability of giving a trial to pyroxilic spirit as an internal remedy, I have been induced to do so in two cases as follow:

About a fortnight ago, a mare of ours, two years old, got into a ditch, and was there for some hours before she was taken out, when she was, as might be expected, very cold and stiff. I ordered her to be well cleaned, then hand-rubbed until dry, and afterwards to be warmly clothed. I then gave her ʒijss of naphtha in warm gruel. In a few hours after, I went to see her, when I found her very warm, especially under the clothes, where, indeed, the skin felt damp as if she had perspired; she also looked quite lively, and was eating. In a short time after, the skin was dry, and not so warm. I thought that the naphtha here, had a diaphoretic effect; but it was impossible to speak positively, as she might have not been rubbed quite dry enough at first. Yesterday, another trial of the agent was made by me. A cream-coloured two-year-old colt was selected, which appeared to be in good health, and to which, at nine o'clock a.m., naphtha, ʒij,

were given him in warm water. As he was rather wild, perhaps, $\frac{3}{8}$ ss of the medicine was lost. The animal was then covered with warm rugs; but I could not ascertain his pulse, because he was so restless. At ten, the skin felt warm; but still his pulse I could not feel. At twelve, I put my hand under the rug, when I felt the body quite damp: the pulse, too, was then distinctly counted, beating fifty times in the minute. At one o'clock, he was much the same. At three o'clock, skin not so warm; pulse, 50. He afterwards got cooler, and the pulse lower, until seven o'clock, when it settled at 32.

It may be observed, that his appetite did not seem to be in the least affected by the medicine, for every time I saw him he was eating his hay.

Now, can we call naphtha a stimulant and diaphoretic?

Be this as it may, I believe that it is a very good substitute for spirit of wine, especially for external applications, and especially in cooling lotions, &c., because it generates more cold by evaporating than agents of that class usually do.

I am, sir,

Yours very sincerely,

GRUFFYDD J. EVANS.

ACTION OF STRYCHNIA ON THE HORSE.

To a horse set apart for experimental purposes, and labouring under no visible affection, but aged, strychnia was given in gradually increased doses, until 5 grs. were administered daily. No apparent effects following its exhibition, four hours after the same quantity was repeated, yet was no action manifested. On the next day the agent was again administered in the same doses, and some hours subsequently not the least alteration in the pulse had taken place, nor did the animal show any unfavorable symptom whatever. With avidity he watched for food, which he has been kept from during the day, being only allowed a little water. He was accordingly allowed his usual quantity of hay and water, and bedded up for the night. At 10 p.m., six hours after the last dose, he was found lying down, and in great pain, striking his belly with his hind legs, breathing laboriously, the circulation increased from 42 to 60 beats in the minute; tetanic spasms were present, and the animal started when touched, however gently. Bloodletting was resorted to, an enema thrown up, and the animal becoming more tranquil, other remedial means were abstained from. On the morning of the next day he was still lying down, and in great pain, and the pulse more accelerated. Blood was again abstracted from the jugular, and the clysters repeated. One hour after, the pulse had risen to 96, and it ultimately rose to 120. Hot fomentations

were directed to be applied to the abdomen by means of rugs dipped in boiling water and wrung out. Pain greater, belly tympanitic, and yet the animal has eaten some hay, but refuses water. Another hour subsequent to this the pulse had fallen to 80, and from that it became reduced to 70, but the swelling of the belly had increased, and the animal still expressed great pain. All at once he experienced a violent convulsive paroxysm, and died instantly.

Inspectio cadaveris presented the lungs in a high state of inflammation; the stomach filled with food, indeed gorged; the intestines distended with flatus, and containing much faecal matter, mixed with a considerable quantity of gravel; the mucous lining of both the stomach and intestines exhibited a slight inflammatory blush, as did the cellular tissue throughout the body, but the brain and spinal marrow were unfortunately not examined. This omission was soon after supplied, for to a horse labouring under paralysis of the hind extremities this alkaloid had been given in gradually augmented quantities, till the dose reached 3 grs. twice in the day; and seven days after, not any beneficial effects having taken place the dose was increased to 4 grs., and ultimately to 5 grs. twice in the day, when the animal was destroyed, as no hope of cure was entertained.

Another opportunity was thus afforded for a post-mortem examination. The viscera both of the chest and abdomen were in this case found in a perfectly healthy state. The membranes covering the brain and spinal cord, particularly the pia-mater, were highly injected, although the substance of the brain and spinal cord was healthy.

The cause of the paralysis was found to be the existence of small osseous tumours that pressed on the spinal sheath, associated with ankylosis of several of the vertebræ.

ACTION OF STRYCHNIA ON THE DOG.

June 16th.—The sixteenth part of a grain was administered to a dog labouring under chorea.

19th.—Three days after, the dose was increased to one-eighth of a grain. About two hours afterwards a slight convulsive paroxysm took place, which soon, however, passed off.

20th.—Dose to be repeated.

21st.—No apparent effect having followed this dose, it was given twice in the day.

24th.—The dose being now one eighth of a grain and given

twice a day without any marked effect, for three days, it was increased to a quarter of a grain. Again, two hours after the exhibition of the agent, another and a more violent convulsive paroxysm took place. The prostration of strength was considerable, the animal being unable to stand, and the spasms of the muscles of the whole frame violent. In a short time, however, he was able to get on his legs, when his pulse was found to be 130; the respiration much laboured; the saliva flowed freely from his mouth; the pupils were dilated; he started at the slightest noise being made, and evinced much fear. He was, however, only able to maintain the standing position by placing both hind and fore legs wide apart, while all power of locomotion was lost. These symptoms gradually disappeared, the animal, in four hours afterwards, being comparatively free from them.

25th.—The same dose was again administered, and nearly the same effects followed, but they were less powerful.

27th.—Two days were allowed to intervene, and as the disease appeared not to have yielded, a quarter of a grain of strychnia was again given. Scarcely any effects followed the exhibition of this dose. The following day it was given twice, and thus repeated daily, without any very marked action.

July 4th.—Two days had again elapsed without the medicine having been given, when it was exhibited in the same quantities as before, this being found as much as could with safety be administered; and although four doses had been consecutively given without any marked effect, yet the dose to-day produced violent action. The animal, two hours after its exhibition, suffered considerable prostration of strength, lost all power of standing, and involuntarily voided the contents both of his rectum and bladder. The pulse and respiration became much accelerated; the saliva flowed from his mouth; the spasmodic twitchings of the body were most violent, and the other symptoms manifested were precisely analogous to those already recorded. Soon, however, the animal was enabled to rise, and by making, as it were, props of his extremities, he maintained the standing position, when the effects gradually became less and less urgent, and four hours afterwards the whole of the unfavorable symptoms had disappeared. The disease not having yielded, the use of the agent was discontinued.

Scattered throughout the pages of this Journal will be found accounts of the action of this powerful alkaloid on different animals. We may be permitted to refer our readers to vols. ix, xii, xiii, and xxiv.

THE BEST MODE OF TREATING CANKER?

To the Editors of 'The Veterinarian.'

GENTLEMEN,—Will any of your numerous contributors who may treat “canker” in the foot of the horse successfully, kindly inform the readers of the *Veterinarian*, what are the remedies so employed?

I have more cases of the kind than fall to the share of most—I would it were otherwise—and, I confess that, do what I will, my labour very often ends in disappointment.

It must be borne in mind, that the disease exists amongst a number of coal-pit horses, which continually work on wet roads, and that unless they become the subjects of a long and troublesome affection, they are never removed from this abode of wet and darkness.

I have used, in various forms, sulphuric acid, nitric acid, sol. chloride of zinc, sulphate of copper, sulphate of zinc, bichloride of mercury, quicklime, bichromate of potass, and the actual cautery.

Yours faithfully,
AN OLD PUPIL.

Extracts from British and Foreign Journals.ON SOME NEW PROPERTIES OF FRESHLY CALCINED
WOOD CHARCOAL.

By M. MORIDE.

THE deoxidizing power of wood charcoal is well known, when used in the dry state and under the influence of an elevated temperature; but I do not know that any one has mentioned it as reducing metals in the midst of neutral, alkaline, or acid liquors, neither am I aware that any one has observed that in contact with a dilute and alcoholized acid, freshly calcined wood charcoal caused the formation of ether. I am continuing this study, but I have determined to make known the results of my first experiments.

Coke, charcoal from lignites, animal and bone charcoal, do not produce the effects of which I am about to speak.

1st. When incandescent wood charcoal is plunged directly,

or after being extinguished with cold water, into an acid solution of sulphate of copper, the metal is gradually deposited upon the charcoal until it may be entirely recovered. In neutral or alkaline liquors the reaction is not so well performed. In Barreswill's liquor, for instance, the copper deposited upon the charcoal has a very beautiful iridescent appearance. When nitric acid, hydrochloric acid, or sulphuric acid is used to acidify the solutions, the effect is the same, only that it is clearest with sulphuric acid.

2d. I have observed that the metallic salts of organic acids are less easily decomposed than those which contain mineral acids.

3d. The solutions of silver in nitric acid, whether neutral or acid, and chloride of silver dissolved in ammonia, are easily decomposed by freshly calcined wood charcoal. The silver is soon seen to cover the charcoal in the most beautiful manner; it sometimes appears crystallized.

4th. Copper may, by this same means, be precipitated from ammoniacal solutions; but if these solutions likewise contain silver, the latter will be first reduced.

5th. Finally, incandescent wood charcoal plunged in Fowler's solution, acidified with sulphuric acid, produces a very agreeable ether which I intend to examine. It will be easy to make in this way, by varying the acids, nitric, acetic, sulphuric ethers, &c.

6th. Zinc, iron, platinum, lead, and mercury may be precipitated by wood charcoal, but they re-dissolve in acid liquors; this does not occur at all with silver, and with copper not until twenty-four hours after the operation.—*Comptes Rendus and Chemist.*

CHEMICAL EXAMINATION OF THE SUBSTANCE OF WHICH WENS ARE COMPOSED.

By J. L. LASSAIGNE.

WE generally know by the name of wens encysted tumours, situated under the skin, circumscribed, moveable, and capable of attaining to a considerable size. These tumours, according to the nature of the matters which they contain, bear in pathology, various names.

In a work undertaken in 1852, by Dr. Legrand, that physician having furnished us with numerous opportunities of chemically examining several of these tumours, which he

had extracted by a process of his own invention, we were enabled to make a comparative examination, and to transmit to him the results, which he included in his work.

The nature of these tumours being still little known, as well as the relation of the proximate principles found in them by chemical analysis, we have thought that it would not be uninteresting to physicians and chemists to publish here the composition of two of these tumours, one of which was situated on the shoulder, and the other on the occiput of two persons treated by Dr. Legrand.

The first of these concretions presented in its composition the union of a very large quantity of albuminoid matter with a soft, fatty matter, and a little cholesterine.

The second was almost entirely formed of this last substance, and gave to the matter contained in this tumour a very remarkable pearly and micaceous aspect.

The following were the proportions of these various principles, as shown by analysis.

Matter from the tumour situated on the shoulder :

Yellow, soft, fatty matter, very soluble in sulphuric ether	15
Cholesterine	2
Concreted albuminoid matter, with traces of phosphate of lime	83
	<hr/>
	100

Substance extracted from a very large wen situated on the occiput :

Moisture	55
Cholesterine	44
Concreted albuminoid matter	1
	<hr/>
	100

—*Journal de Chimie Medicale and Chemist.*

THE ACTION OF STRYCHNIA ON THE ANIMAL ECONOMY.

MR. COCHRANE, writing to the *Medical Times*, says, "some time ago I was induced to try how strychnia would act upon a kitten, a stout little animal; the quantity I employed was small, less than half a grain, which I rubbed over its gums. The action of it upon the animal was very gradual, affecting first the head, producing a sort of tottering walk, followed with slight tetanic indications, which went on increasing in severity, till they became very violent, causing in all the extremities the utmost extension, with extreme rigidity. In connection with the case, what surprised me much was the

condition in which, an hour after, I found the old cat, the mother of the kitten. There it lay dead, with its limbs fully extended, and in the most rigid condition. My efforts to bend its limbs or replace them in their usual state were of no avail; very rigid they were, and very rigid they remained. It had licked the mouth of the kitten, and, in consequence of doing so, speedily became affected in the way I have thus briefly described. On the following day I again tried to unbend and alter the position of the extremities, but with no more success than on the former trial to do so. Observations of the kind to which I have referred, I consider of great value in a medico-legal point of view, as indicative of phenomena that I believe are peculiar to the action of strychnia. I speak not now of detection, but merely of the effects or manifestations that arise from the exhibition of this poison. As the dose of it may be large or small, so will its effects become more or less apparent and violent, and ultimately produce fatal results.

PROFESSIONAL REUNION.

IN our last number we announced the anticipation of a *soirée*, to be given by the President of the Royal College of Veterinary Surgeons, W. Field, Esq. We have now the gratification to inform the profession that it will probably take place on the last Wednesday in March, the 26th inst. Further, that those members of the profession who are desirous of being present, will, on communicating their wish to the Secretary, E. N. Gabriel, Esq., 10, Red Lion Square, have an invitation-card transmitted to them.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

On Cystic Entozoa in the Human Kidney. By T. HERBERT BARKER, M.D., F.R.C.S.

IN our last volume, p. 463 *et seq.*, we inserted some account of the metamorphoses or further development which certain parasites undergo, when introduced into the living organism of a higher order of animals: a subject replete with interest, and opening up altogether new views as to the origin of many of the entozoa, and superseding the necessity of having recourse to false philosophy, or that which will not bear the test of reason, to account for their existence, namely spontaneous generation. "*Ex nihilo, nihil fit.*"

The above pamphlet records a case in which no less than upwards of 150 cysts containing echinococci, were voided by the urethra, at different times; their size varying from a pin's head to that of a walnut, commonly in clusters, but without any impairment of the general health of the person, although the pain at times was great: this varying in proportion with the size, number, and rapidity with which the entozoa were expelled.

The source of these hydatids, in the opinion of the author, is to be traced to the food, for at p. 8, we are informed, when speaking of the patient's diet—

"For some years past he has rarely eaten either beef or mutton, having a natural aversion to these meats, and for one year, six years ago, he was a vegetarian. As an ordinary rule, however, he has lived on pork, and thinks that, on an average, he has taken 'pig's fry,' consisting principally of the liver, at least twice weekly. He has on more than one occasion eaten 'measly' pork, and pig's chitterlings (the intestines of the animal) has been a frequent dish. He is also very fond of sheep's head, and especially of the brains, but does not know whether the brains he has thus taken were those of 'sturdy' sheep. He has likewise been accustomed to take in the morning herbal bitters, such as decoctions of horehound, wormwood, and agri-

mony. He is fond of coarse brown sugar. He does not remember ever having eaten meats badly cooked, and has not suffered from other forms of entozoa, except ascarides, which troubled him greatly in early life."

In another similar case, recorded by J. J. Evans, Esq., of St. Neot's, the origin of these parasites appears to have been pigs' brains.

" 'In regard to diet,' Mr. Evans further writes, 'I have ascertained from my patient, that, about seventeen years since, she, as well as the whole of the family, were much in the habit of eating pig's brains in large quantity, as well as occasionally pig's fry; but that, since her first symptoms of disorder, now ten years ago, she has lived principally on mutton. The statement she made was, that her father, being a waggoner, was in the habit of bringing home large pig's heads. Her mother usually put the brains into a pudding with seasoning, to constitute a meal for the family, and they individually ate heartily of it.' "

We have lately been officially consulted by the Board of Admiralty, respecting "measly" pork, an affection depending also on the presence of hydatids embedded in the muscles, &c.—the *hydatis cellulosæ*—and we had no hesitation in stating our conviction, that such meat was unfit for food.

The record of these cases on which we have commented, is closed with the following sensible remarks :

"However much we may be in the dark as yet on many points, there can be no doubt that great advances have been made, and that we are at last on the true track towards discovering the origin of the entozoa; and as book opens book, and one science betrays the secrets of another, so it is to be hoped that this inquiry may lead us into spheres of pathological observation, which, at the present moment, may seem removed altogether from this special investigation.

"Not many years ago, the whole question of the entozoa was a sealed and mystic volume, which, when broken into, was full only of hard sayings and speculations, partaking more of the character of old alchemy than of rational thought. Perhaps, indeed, no theory so entrapped the world for a time as that of spontaneous or equivocal generation, the utter and absurd fallacy of which is now so manifest. As time goes on, and experiments advance, it is not too much to suppose that we may consider the pathology of the entozoa in the light of a proved scientific problem, wrought out by the most rigid rules of the inductive philosophy."

THE VETERINARIAN, MARCH 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

ON THE APPRENTICESHIP SYSTEM.

WE have been asked to give our opinion on the apprenticeship system; but we hesitate somewhat to comply with the request, from a fear, almost amounting to a conviction, that to some persons we shall give offence.

Without any hesitation, however, we assert that it is fraught with much good or ill, depending upon the manner in which it is carried out. When a conscientious discharge of his duties is determined on by the preceptor, and systematically performed by him, the pupil being docile and desirous of availing himself of the advantages presented to him, we then believe that a very great amount of good is the result: and this, too, is to be obtained without the teacher at all stooping from his position; since we would not have him forget the relation in which he stands. Respect for himself begets a corresponding feeling in those placed immediately under his care, while urbanity of manners, united to a firm conviction of the correctness of the statements made by him, will always favorably impress the mind of the learner, and ensure confidence.

Nor is it necessary that alone *orally* he should convey to his pupil instruction. Many other aids he may avail himself of, such, for instance, as direction to the best authors to be consulted on any subject under consideration, or for any extraordinary case that may have presented itself. The differences of opinion entertained among writers will often open up a wide field for inquiry and of thought, and tend to strengthen the mind of the learner, by inculcating a love of reasoning and research. It may be that the pupil, at first, will be surprised that these differences should exist; but on expressing his feelings to his employer, they may perhaps be satisfactorily explained by a reference to some facts which the student has

overlooked; these being apparently unimportant in his view, yet in reality the opposite. Or, we may suppose a case to occur in which the malady presents phases that are somewhat uncommon, for the forms of disease are often protean; and these it will be equally the province and the gratification of the preceptor to assist the aspirant in the explanation of, by tracing the effects up to their causes. His long experience will generally enable him thus to act; although possibly he may, at times, be obliged to confess his inability satisfactorily to account for all that has taken place. This, however, will in no wise detract from the estimation in which he is held by his pupil, but rather it will tend to enhance it, for the latter knows that thought and experience have both been brought into exercise, and the deviation from the ordinary progress of disease must be very unusual.

We do not, of course, advert here to the mere *routine* of practice. That, we take for granted, every employer will inculcate; self-interest, perhaps, will be sufficient to actuate him to do this. What we are contending for is, that opportunities should be possessed by the student to acquire a knowledge of the science of his profession, either by the performance of experiments, or by such other means as are conducive thereto.

By experiments, we do not mean experiments performed on living animals. This we cannot sufficiently condemn, and especially in the hands of the *tyro*. His ignorance would necessarily lead to the giving of pain, perhaps even the causing of torture; while his powers of observation would not enable him to arrive at any definite or correct conclusion. Indeed we may be much inclined to question the real benefit that has been derived from the adoption of *vivi-section*, and we are quite sure that those who have indulged in it have frequently done so unnecessarily; while we are altogether disbelievers in the *improvements* that some experimental physiologists would make in the animal organism, by the removal of parts which, they are pleased to say, can be done as well without as with, and that simply because they cannot find out their uses. 'Tis "a delusion and a snare," to say the

least of it, although, were we to give vent to our feelings, we should express ourselves in much stronger terms than these.

It may be allowable at times to dissipate a doubt by the institution of a comparative experiment, or even a series of experiments; and especially will this apply to the action of medicinal substances. The function and situation of many parts, too, may be ascertained by a reference to the lower animals; but when this is called for, the student should never be allowed *alone* to institute and carry out the investigation.

By experiments, we rather refer to those that are philosophical in their character. What a source of information is opened up here! Nor would we have his inquiries confined to the chemistry of his art. This may be said to be but the lesser part, however important it must be confessed to be. Nature all around us is one vast laboratory. It is there that she works, ministering to the wants and the well-being of all animated beings. Change within change goes on, subservient to the great end in view. Much that is involved in mystery is, it is true, carried on by her, and much that it is not necessary for us to be made acquainted with; yet the torch of science has disclosed some of the hidden wonders of the universe, and these have tended only more intensely to excite the spirit of research, and thus to lead the mind through Nature up to Nature's God; so that it may be able to see more of the handy-work of the Great Architect, and adoring, to bow in admiration of the wisdom and design displayed by Him in all his works.

There need be no apprehension felt here, nor limits set to inquiry, when it is instituted in a right and becoming spirit. Still we are told that—

“Not to know of things remote, obscure, and subtil,
But that which before us lies in daily life, is the prime wisdom.”

'Twill be necessary, therefore, that the student should be directed in this also; and the preceptor is consequently called upon to lay down the plan and the course of procedure for him to adopt, and occasionally also to institute an inquiry as to the progress that is being made by him.

In what has been advanced, it may be said, and truly said, that very much is demanded of the teacher, and perhaps more than time and opportunity will permit his carrying out, whatever may be his inclination. This we believe to be very often the case, and on that account it is we incline to the opinion, that rarely is it that the student derives from an apprenticeship so great an amount of good as he had anticipated or that it is capable of furnishing.

In the above view of the subject it must be also confessed that we have taken a high standing, and supposed the preceptor and his pupil alike solicitous, the one to impart, and the other to acquire knowledge.

But let us now, for the sake of the argument, suppose the opposite exists of what has been advanced, and that too on the part of either the one or the other—the teacher or the taught, and we fear this is sometimes the case—then what are the consequences? and where are the benefits resulting from an apprenticeship?

We have written thus far freely, and without restraint, just as the thoughts have arisen in our minds; and we have said nothing of those divisions of science not yet recognised amongst us, as likely hereafter to constitute a part of the education of the veterinary surgeon: we refer to natural philosophy, botany, and agriculture; sciences the elements of which, associated as he is, demand from him some acquaintance with their principles.

Unquestionably, the responsibility is very great which attaches to a preceptor, but he often reaps his reward in after life by the gratitude of those he has been instrumental in directing in the right course. But should this not be evinced, or even the reverse obtain, still he has within himself the pleasing consciousness that he has performed his part of the moral compact; and this, to a rightly constituted mind, will prove a sufficient recompense.

At the present day, we hear too much of the senseless cry, "Give us practical knowledge." The expression, indeed, seems to be almost stereotyped amongst us; and those who employ it most commonly condemn theory; but they forget

that to make any onward progress, theory, or a knowledge of principles, the term being accepted in its true sense, must always be combined with practice, and should likewise direct or govern it. This it is which enables us to assign the "why and wherefore" when called upon. It lifts us out of the morass of visionary conjecture, and places us on the rock of certainty, so that we feel confident and secure as to the position in which we are standing, or the steps that we may have taken.

Well do we remember our own apprenticeship. The routine of business, it is true, we were instructed in; and we believe we were as attentive as most, and also desirous of acquiring knowledge. We might, likewise, have passed muster as being somewhat observant, if not critical and inquiring; but of principles we were to its very close as ignorant as a Hottentot. These had never been inculcated, and consequently the mind had never been rightly trained. We went forth into the world; there we had to do battle, and to acquire that by dint of mental labour, not unaccompanied with some degree of irksomeness from attendant inconveniences, and want of opportunity and time for study, which early instruction would have rendered both easy and pleasant.

There is much more that might be said on this subject, and hereafter we may perhaps resume its consideration.

ARMY APPOINTMENTS.

WE have been, and still are, at some loss to account for the seeming indifference shown by the junior members of our profession to appointments in the army as veterinary surgeons. The time was when they were sought after with the greatest solicitude; and this will occur again, we anticipate, but only, such is the contradiction of human nature, when they are not to be obtained. It is true that the remuneration in the shape of "pay" is not large, but the position is a gentlemanly one, it is also permanent, and depending on the conduct of

the party filling it, so will be the estimation in which he will be held, he being thrown into association with those who can appreciate talent.

With no little degree of exultation could we point to many members of our profession who have been, and are, most highly esteemed in the army; and we feel assured that a person possessing a knowledge of his profession, amenity of manners, and education, could not fail to do well; but let not those wanting in these requisites hope for any success.

Of late, a goodly number of appointments has been made, the war having opened up the outlets for young men of spirit and ambition; and we believe that at the present time there are some vacancies. This we do know, that the principal veterinary surgeon to the army is most zealous in the performance of his duties, and ever anxious to promote the interests and the advancement of his professional brethren; but we repeat, let none apply to him who cannot bear the test of qualification.

We have also been given to understand that to meet the present emergency, government have resolved to make some alterations, which are much to the advantage of those who may be successful in obtaining appointments; and we are sometimes inclined to wish ourselves young again, so as to become competitors on this arena for honours; for we look to the army as a vast field whereon much may be yet reaped for the benefit of the profession, and did we not fear that we should offend our friends in it, we would tell them that we do not think that as yet they have done all they might to aid us in our onward march. May we hope that this will operate on them as a timely provocative? for among them are many whose abilities we are not ignorant of.

Gratefully we acknowledge the sprinkling of communications we have already had from them; but we want the full and copious shower, with its periodical return, since this alone will give us fruit in abundance, filling our *pages* with plenty, and increasing their value.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, JAN. 16, 1856.

PRESENT: Messrs. Braby, Burley, Cheeseman, Jex, Peech, Robinson, Silvester, Stockley, Wilkinson, and Withers; Professors Simonds and Morton, and the Secretary,

W. CHEESEMAM, Esq., Vice-President, in the chair.

The minutes of the previous meeting were read and confirmed.

The *Secretary* read a copy of a letter forwarded through him, by the Committee appointed at the previous meeting, to Professor Dick, to be laid before the Highland Agricultural Society, to which he said no reply had been received.

The *Secretary* read a letter from Mr. Hallen, of the Dépôt, Canterbury, enclosing a letter addressed to that gentleman by Professor Dick.

The *Secretary* announced some donations to the Museum, from Mr. Brown, of White Friar Street. He also stated that Mr. Brown, with some other gentlemen, whose names were not in the register, had applied to have them inserted.

Mr. Braby moved that the applications be referred to the Registration Committee.

Mr. Silvester seconded the motion, which was unanimously adopted.

The *Secretary* then, in behalf of the President of the College, who was unavoidably absent, proposed Mr. Jones, of Worship Street, as a member of Council, in the place of the late Mr. Lacy.

Mr. Jex proposed Mr. Constant, but withdrew his nomination, on the understanding that that gentleman was to be proposed at the Annual Meeting in May. Mr. Jones, on the ballot being taken, was declared unanimously elected.

The *Treasurer* laid on the table his quarterly balance sheet, showing a balance in favour of the College of £348 17s. He stated that at the commencement of the next year, in May, there would probably be a balance in hand of about £300, and suggested that some portion of that sum should be placed to a deposit account at the bankers, so as to bear interest, which at present was 5 per cent.

Mr. Peech proposed the reception of the balance sheet.

Mr. Robinson seconded the motion, which was unanimously adopted.

It was decided, on the motion of Mr. Wilkinson, seconded by Mr. Gabriel, that £250 be transferred to the deposit account.

Mr. Withers gave notice that, considering the prosperous state of the College finances, he should at the next quarterly meeting renew the subject of an increase to the Secretary's allowance.

The Registrar's Report announced three deaths; namely, George Williams, of Bath, 1820; Jonathan Wainwright, of Dublin, 1830; and William Hammond, of Wilton, 1845;—and twelve admissions during the quarter.

Mr. Jew asked if any steps had been taken to fill up the Edinburgh Board, which he believed consisted of only three or four members.

The *Secretary* gave notice that at the next meeting he should move that the Board be completed.

Messrs. Peech, Braby, and the Secretary were named as the Committee of supervision, and the proceedings terminated.

SAMUEL PEECH.
EDWARD BRABY.
E. N. GABRIEL.

Veterinary Jurisprudence.

CRUELTY TO ANIMALS.

MARYLEBONE.—James Waterman, a drover, in the employment of Mr. Nathan Goddard, dairyman, Chelmsford Mews, Sale Street, Paddington, appeared before Mr. Broughton for re-examination, at the instance of Mr. H. R. Forster, Superintendent of the Royal Society for the Prevention of Cruelty to Animals, to answer a summons, in which he was charged with having cruelly ill-used and tortured two cows. The particulars connected with the previous examination were given in our paper of Thursday last.

The evidence on the former occasion showed, that on the morning of Wednesday last, about two o'clock, two cows, among other beasts, were brought to the goods' station of the Great Western Railway, Paddington. They were observed by White and Stowe, the porters on duty, respectively, to be about to give birth to a calf, when they prepared for them two separate pens, with fresh straw for them to lie upon, and gave them some hay. One of them was soon delivered of a calf, and the other indicated appearances that it was about to be in the same situation. At seven o'clock the defendant called for the cows, and insisted upon taking them away, and

it was with the greatest difficulty that he was at last able to remove them from the pens. He eventually succeeded, leaving the calf behind, the delivery of the after-birth not being completed. The defence was that the removal of the cows did them no harm, and that the one not delivered of its calf, on its arrival at the defendant's master's yard, did not present the appearances alluded to, and that the calf was not born for two hours after. Mr. Broughton adjourned the inquiry, in order to have the evidence of a veterinary surgeon upon the subject, and Mr. C. Spooner, senior professor and lecturer at the Veterinary College, was selected to give his opinion.

The evidence of the witnesses having been read:

Professor Spooner, being sworn, said, he first wished to know if the delivery alluded to was completed?

Stowe said, that it was not when the cow left the station.

Mr. Broughton—Would it not be an act of great impropriety to remove cows from pens, where they were with fresh straw, which had been placed there with great humanity by the porters, and drive them a distance of three quarters of a mile in the situation they were?

Witness—Unquestionably. I cannot conceive a greater act of impropriety and cruelty. Any person possessing common sense, or any feeling of humanity, would revolt at such an act.

Mr. Broughton—Does your answer apply to the cow that had calved, or to the other cow which had shown a presentation?

Witness—It will apply to either case. (The professor entered into details, showing the danger arising from removing a cow about to calve.)

Mr. Broughton—Then your answer applies equally to the case where a cow has given birth to a calf and where there has been a presentation?

Witness—It does. The latter fact makes the case more revolting.

Mr. Broughton—Is it possible for a presentation to take place, and then for it to return after the animal has been driven a short distance?

Witness—It is.

Mr. Broughton—Then if the men at the railway state that it had taken place, and another at the defendant's master's yard that it had not, both may speak the truth?

Witness—Yes, sir.

Mr. Broughton—The removal of a cow in the state it was at the railway might be attended with a dangerous consequence?

Witness—Death might follow, as the cow must have suffered great pain. After a cow has given birth to a calf it should be allowed to remain a few hours, and, when a cow has shown symptoms that it is about to calve, it should be allowed to remain till the birth has taken place. To do otherwise would be unsafe, both to the cow and its young. A cow requires more attendance at the time of parturition than any other animal. It was decidedly wrong to remove the cow not delivered, as her sufferings would be increased.

In answer to *Mr. Field*, solicitor, who attended for the defendant,

Professor Spooner said, that he had all his life paid great attention to the habits of domesticated animals, and that previously to being engaged at the Veterinary College he had directed his practice to cows.

Mr. G. Waters, veterinary surgeon, York Street, Bryanston Square, corroborated the evidence of Professor Spooner.

Mr. Field—Do you know that it is the practice to drive a cow out a day or two before it calves, and that it frequently calves on its way to market?

Witness—Yes; but it is very improper. When a cow is about to calve it should be kept quiet, and have nourishing food.

Mr. Harry Daws, veterinary surgeon, Gloucester Place, also corroborated the above evidence.

Mr. Field, for the defence, said, he should produce evidence to show that it was oftentimes the case that cows were removed to market from a farm just as they were about to calve, that they calved on the high road, and that there was a cart behind to receive the calf. It was thought that it did no harm to the cows to drive them a distance just before they calved. He examined the following witnesses:

Joseph Barnes said, he had been a drover all his life, and had attended nearly all the markets in the country. He knew that what Mr. Spooner had stated was wrong. Driving a cow a distance before it calved would ease the birth of the calf. Even if there were appearances of a birth it would be better to drive it.

By *Mr. Forster*—I have taken many from Leyton when they were down calving. I have had, perhaps, as many as fifty in a drove, thirty of which might be down calving. Directly a cow calves the calf is placed in a cart, and the cow is driven on. This happens all along the road, and the cows travel as well as if they had not calved at all. (Sensation in court.)

Mr. Broughton remarked that the whole tenour of the wit-

ness's evidence only went to show that the cruelty to cows spoken of by the railway men was practised elsewhere.

By Mr. Broughton—Letting cows (as had been alluded to) travel a little distance was better than letting them rest. A mile and a half would not be too far for them to go.

William Munday, cowkeeper, Palace Row, New Road, said that he did not agree altogether with Mr. Spooner or the last witness. He thought that a cow which had calved or one that was about to calve, ought to be kept quiet a short time.

Mr. Broughton—Recollect, Mr. Field, this is your witness.

The witness added, that he understood cows did not suffer so much if they were driven a little way either before or after calving. He recollected once seeing a cow about to calve separate herself from others in a field, and walk about.

Mr. Forster—That might arise through pain, and a desire to get to some shed where to deliver itself.

Witness—It might be so.

Robert Attwell, dealer in cows, expressed opinions similar to those stated by Mr. Munday.

Mr. Broughton observed, that the case had turned out to be of some importance, as it appeared to be a practice throughout the country to treat cows in the way the evidence showed they had been treated on the present occasion. He was happy to say, that the treatment of animals at the present day was different from what it was years ago, and that, in many cases, they had every protection afforded to them, which protection was carried into effect by the agency of the Society which had laid the information against the defendant, that Society being supported by noblemen and gentlemen. The defence set up proved to him that the Society should use its endeavours all over the country to prevent the cruelties that had been spoken of; common sense would tell any one that no cow ought to be treated as these cows had been.

Mr. Field said, that what the defendant had done had been through ignorance, and that he bore a good character. He hoped the magistrate would be lenient to his client, and he assured him (Mr. Broughton) that he (Mr. Field) would do his utmost to let his opinions be known among the drovers, &c., in order to prevent the offence in future.

Mr. Broughton concluded by remarking, that he hoped the humanity of the railway men would be communicated to their employers.

The defendant was fined 40s., or in default a month's imprisonment.

G. Beaumont, a drover, was charged with cruelly ill-using a bull, in Bell Street, Paddington.

The case was proved by Captain W. Elliott, and the defendant was fined 10s., or seven days' imprisonment.

In another case a horse, nearly starved, was brought up in the charge of Rutherford, an officer of the Society. It was in a hackney-cab at four o'clock in the morning.

The defendant in this case was fined 10s., but if he got the horse slaughtered the fine was to be remitted.

In the course of the day Rutherford informed Mr. Broughton that the animal had been sold for 7s. 6d., and slaughtered.—*The Times*.

MISCELLANEA.

A BASKET OF RUBBISH.

IN no instance are the transmutations of chemistry seen to a more wonderful degree than in the changes which can be produced from the refuse-basket of the *chiffonier* or collector of old rags, bones, offal, &c. "Let us," observes an intelligent writer, in the Irish Industrial Exhibition Report, "examine the ragman's basket. What do we turn up first? We have pieces of cotton and linen rags—the raw material of the paper-maker, who transforms these unsightly objects probably into the most delicately scented note-paper. Here again, we have pieces of paper of all kinds—what can they be for? They form materials for making pasteboard, dolls' heads, and occasionally papier maché. What a singular history we have here; the ball-dress of a lady drops into the rag-basket and reappears as a *billet doux*; disappears again to reappear once more in the drawing-room or the nursery as a work-box or a doll. Returning to the basket, we find pieces of woollen cloths of various colours; what use can we put them to, as they do not make paper? The bits of scarlet cloth, which are dyed with cochineal, are boiled with soda, to extract the colouring matter, which is used in dyeing chessmen, billiard balls, &c.; or we may sort the different coloured cloths, and prepare from them materials for making flock papers for rooms, or we might make roofing felt of them. From the bones rejected from our dinner tables are made knife-handles, buttons, and a thousand other articles of a similar kind; or we may obtain oil from them, on the one hand, from which soap is made, and, on the other, glue, or the most transparent gelatine, from which ornaments or visiting cards may be made; the residue being burned to make ivory black for the manu-

facture of blacking, or phosphorus for the manufacture of lucifer-matches; or we may use it for manure, or as an element in the manufacture of earthenware; and finally we may distil the entire bone and get an ivory-black fit for making sugar white, whilst another substance is at the same time obtained, from which smelling-salts are made. Thus the bones thrown to the dogs, in this utilitarian age may come back to us again on our dinner-table, as a part of our dress, as the medium of our politeness, as a means of washing our hands, lighting our fires, and blacking our boots; and, finally, as the contents of that all-important article—a lady's smelling bottle. We will suppose we have a quantity of old woollen rags, too bad to be used for any of the purposes above mentioned, and animal offal, such as comb-makers' shavings, pigs' toes, dried blood, &c.; if we calcine these substances for a considerable time with pearlash or carbonate of potash (which is the principal ingredient in the ash left by trees when burned), and some iron filings, in an egg-shaped iron pot, stirring it from time to time, we shall obtain a mass which, when boiled with water, the insoluble impurities removed, and the liquid evaporated, will yield beautiful yellow crystals of a substance known as prussiate of potash. But what is the use of these yellow crystals? Distilled with oil of vitriol, the salt is decomposed, and prussic acid formed, the most violent of all poisons. Prussic acid made from woollen rags, blood, and pigs' toes! This acid, in a peculiar state of combination with iron, forms what is called ferro-prussic or ferro-cyanic acid, which, combined with potash, forms the yellow salt of which we are writing, and which, although it may be said to contain prussic acid, is nevertheless quite innocuous. If, instead of distilling it with sulphuric acid, we fuse it at a bright red heat, the iron separates, and we get a white salt, containing prussic acid in combination with potash, and which is, to a great extent, poisonous. Thus, a little iron alone is sufficient to alter all the properties of this curious substance. The white salt made in this way is largely employed in preparing solutions of gold and silver for electro-plating; and the greater part of the silver and gold with which the various electro-plated articles in common use have been coated, has existed at one period in combination with this white substance. Another use of this yellow salt is to produce prussian blue, which is formed by adding to a solution of it in water some sulphate of iron or green copperas, when the ferro-prussic acid will part company with the potash; the latter will unite with the sulphuric acid of the copperas, leaving the iron of the latter to unite with the ferro-prussic acid to form the prussian blue.

This powder has various uses; it is used as a paint, and to make thumb and button blue for the laundress; it is used to colour confectionery, and by the Chinese, whom the Europeans have learned to imitate, to make green tea. But its principal use is in calico-printing. When used for the latter purpose, however, the prussian blue is usually made in the cloth itself. If we thicken a solution of green copperas with gum or flour, and print a particular pattern upon a piece of cotton, and then pass it through a bath of the yellow salt dissolved in water, we then obtain the pattern in prussian blue so much admired by ladies. In general, the beautiful dark blue dresses, with white patterns, are made by covering the whole of the calico with prussian blue, printing the pattern upon it with caustic soda, or potash, thickened with pipe-clay. The caustic substance decomposes the prussian blue, leaving the iron in the cloth as a buff pattern; but, by washing in a bath of oxalic acid, the iron is removed, and the pattern remains of a beautiful white. Thus may worthless woollen rags, and similar vile things, come back again to us; at one time in our tea, while they may have assisted to make the spoon with which it is stirred; at another as a brilliant-coloured flower upon our room papers; or, finally, as the colouring material of a lady's dress."

MONGOLIAN CUSTOM.

WHEN the Mongolian army proceeds on service, a body of men is sent two days' march in advance, and parties are stationed upon each flank in the rear, in order to prevent its being attacked by surprise. When the service is distant, they carry but little with them, and that chiefly what is requisite for their encampment, and vessels for cooking. They subsist, for the most part, on milk. Each man has, on an average, eighteen horses and mares, and when that on which they ride is fatigued, they change it for another. Should circumstances render it necessary, in the execution of a duty that requires dispatch, they can march for ten days together without dressing victuals; during which time they subsist on the blood drawn from their horses, each man opening a vein and drinking from his own animal. They make provision, also, of milk, thickened and dried to the state of a hard paste or curd.—*Marco Polo's Narrative.*

ARMY APPOINTMENTS.

HEAD QUARTERS, SEBASTOPOL, *Jan. 21.*

Veterinary Surgeon Stockley will, from this date, have the care and supervision of all officers' chargers, and baggage-animals, as well as any public animals attached to headquarters. He will receive an addition of 1s. 6d. per diem, to the allowance already granted to him.

Jan. 24.

Mr. Gloag, principal Veterinary Surgeon, Land Transport Corps, will proceed to Constantinople, to superintend the purchase of veterinary medicines and stores; and, subsequently, to the Dardanelles, to examine the state of the animals at the depôt there.

From the 'London Gazette' of Friday, Feb. 8, 1856.

William Thomas O'Donnell, gent., M.R.C.V.S., serving with the temporary rank of Veterinary Surgeon to the Land Transport Corps, to be Veterinary Surgeon.

OBITUARY.

WE copy the subjoined from the *Medical Times and Gazette* of Feb. 9th, 1856.

"The scientific circles of Edinburgh have sustained a severe loss by the death of Professor Barlow, of the Royal Veterinary College, a man as much respected for his scientific attainments, as he was beloved for the gentleness and amiability of his character. He died on the morning of the 29th instant, at No. 1, Pilrig Street. About a month ago, he was seized with what seemed a rheumatic attack, which gradually assumed the symptoms of a severe spinal affection. After some weeks of intense suffering his system yielded to the pressure of excruciating pain, and the virulence of the nervous attack, which the ablest medical skill failed in subduing.

"John Barlow was born on the 20th September, 1815, at the Oak Farm, Chawley, Cheshire, which had been in the possession of the family for about 200 years. The subject of this notice early evinced a strong love for animals, and the cows of his father's dairy became more particularly the objects of his special study. This youthful predilection doubtless influenced his choice of a profession, and tended to induce him to devote much of his time to the obtaining of a knowledge of the diseases which affect the domesticated animals. In 1842, Mr. Barlow joined the Edinburgh Veterinary College

as a student—no doubt attracted by the reputation of that veterinary school, and its distinguished founder, Professor Dick. After attending two sessions at the College, he obtained his diploma, having been the most distinguished student of the course. The following session he acted as demonstrator, and, in 1845, was appointed Assistant-Professor and Lecturer on 'Zootomy—including the anatomy and physiology of the domesticated animals.

"Since then, his career has been successful and distinguished. He early saw that the veterinary art had not acquired in this country that honorable position to which it is entitled. He felt, and justly felt, that little had been done to educate and enlighten the public mind as to the relation in which the teaching of veterinary science stood, to the alleviation of the sufferings of the domesticated animals,—sufferings more or less the result of man's ignorance and man's cupidity. He knew that in France, and in several of the German States, a more correct appreciation of the veterinary art had long existed, and that, consequently, institutions for the dissemination of veterinary knowledge were liberally supported by the respective governments; while in this country, although possessing the most highly improved breeds of all the domesticated animals, no national provision had hitherto been made for the teaching of the veterinary art. This, however, only stimulated the zeal with which he sought to advance to its due position an art which is alike intimately associated with the interests and feelings of civilized humanity. He knew that the dissemination of knowledge in reference to the structural formation and physiology of the domesticated animals was a noble calling, and he humbly endeavoured to advance that knowledge. Too enlightened, active, and untiring, to rest satisfied with the results of the past, he zealously endeavoured to extend his knowledge of those sciences bearing on the veterinary art. When the daily labour of teaching was finished, he began the prosecution of his own studies. No investigation bearing on physiology was too irksome to command his careful study. He directed to the pursuit the whole powers of a cultivated, discerning, and energetic mind. Enthusiastic in his profession, he infused the spirit of emulation and desire for improvement into his pupils, by whom his loss is deeply felt.

"For several years Mr. Barlow has been engaged in a work upon the 'Anatomy of the Horse,' and the amount of labour he undertook in carrying out investigations bearing on structural formation, made him, in an eminent degree, an accomplished microscopist. His career has closed before the

completion of a work so much required by the professional student.

“John Barlow was a member of the Society of Friends. His career has ever been marked by the principles which distinguish that body of professing Christians. Modest, gentle, and unassuming in his manners, he obtained the respect of all who came in contact with him. Moral worth, and a delicate susceptibility towards the feelings of others, secured to him the warm attachment of a circle of intimate friends.

“In the death of John Barlow, veterinary science has lost one of its most enlightened teachers, and one of its most zealous students.”

We may well regret the demise of Mr. Barlow, and we do so sincerely, for we can ill afford to lose the industrious and the scientific from among us; and such it appears, from the above account, Mr. Barlow was. There is, nevertheless, a melancholy gratification in transferring such a testimony to our pages.

Personally, we were not acquainted with him, nor has he, since we have become the editors of this Journal, contributed to it, but we received from him a *conditional* promise, which was being realized, and we had hoped that the time was not far distant when it would have been fulfilled. But his work on earth was done; and of him it may be said, “his sun has gone down at noon.”

“Alas! we are but eddies of dust,
Uplifted by the blast, and whirled
Along the highway of the world,
A moment only, then to fall
Back to a common level all,
At the subsiding gust!”

“Yet say not in mournful numbers —
‘Life is but an empty dream.’

* * * *

“Life is real! Life is earnest!
And the grave is not its goal;
‘Dust thou art, to dust returnest,’
Was not spoken of the soul!”

We have also to record the death of Mr. M. Archer, of Bungay, Suffolk. He died on the 21st January, aged 34. He obtained his diploma in 1839.

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Communications and Cases.

THE OPERATION, ABSOLUTE AND RELATIVE, OF
VARIOUS KINDS OF ALOES ON THE HORSE,

WITH CASES ILLUSTRATIVE OF THE BENEFIT ATTENDING THE
EXCLUSIVE USE OF PURGATIVES AND CLYSTERS IN IM-
PACTION AND SPASMODIC COLIC.

By JOSEPH GAMGEE, M.R.C.V.S., London.

FROM my published observations and those that are here to follow, it will be observed that the object I have in view is not to prove that certain medicinal agents, often used in a special class of diseases, are prejudicial, so much as to show that more reliance, than for the past, can be placed in others, acknowledged to be simple, though very generally believed not to be prompt, or sometimes not safe, in their action. At the same time, the nature of things has led me to inveigh against some of the former, and extol the advantageous operation of the latter; and if in the end I contribute in any way to quiet the apprehensions of young and inexperienced practitioners, and furnish sound doctrines for their guidance, it will be to me a source of gratification.

It being generally considered that from ten to twenty hours are required to purge a horse, it is supposed that relief cannot thus be directly afforded in disorders of such an urgent nature as colic and indigestion. To quiet the horse is thought invariably advisable, and every means is resorted to to attain this. So reluctantly is the animal seen to roll,

that he is often tied up and made to stand; at others he is moved about totally against his will. But it is not these false notions alone I wish to combat, which must be to many palpably absurd, so much as the first one referring to the action of aloes, evidently founded as it is on error, indicative also of much shortsightedness. I believe that a horse is radically relieved by a purgative dose of aloes much earlier than is generally supposed, and my belief is supported by evidence clear, definite, and easily obtained.

Let us reflect on what occurs when a whole stable of horses, from various motives, is purged at a time; and to take horses in fair condition, let us choose a stable of ten in the month of August or September, then going into preparation for the hunting season. They have been prepared by a bran mash the previous evening, with little or no hay after it, an hour's walk in the morning, and on returning from exercise at about 8 a.m., receive their dose of physic: a little water, and at most a handful of hay, is offered them, till noon, when water—tepid or not—and a little bran mash or hay is given to each. Some of the free feeders will eat as usual—most of them show a want of appetite—in a word, they are nauseated. At this time it will already be observed that there are *more than an ordinary number* of, and *more than usually copious*, evacuations. On entering the stable about 5 o'clock these signs are more apparent; some of the horses are relaxed, and not long after some of them are actually purging, and next morning, in most or all, the bowels will be found to have freely responded to the medicine.

If the last of the ten has taken twenty hours to purge, no such time has been required to give relief should that horse be labouring under disease. The purging is a sign that follows, and does not precede, nor is it necessarily concomitant with, the beneficial effects of the aloes. The nausea, the primary effect on the nervous system, is as important as the expulsion of feculent matter, and it is by no means to the degree of looseness of the bowels, to the number of evacuations, that we are to look in determining the effect of one purge, or the establishing the superiority of one kind of aloetic extract over another.

In the foregoing illustration of the action of purgatives on several horses at once, under the same circumstances, we have pictured in our mind what we have many times seen in practice, and what may often be witnessed. There is a series of experiments cited in Mr. Morton's valuable 'Manual,' at page 89, of the last edition, which would appear to contrast with what I have said above. The time required

to cause action is said to have averaged from fifteen to twenty-seven hours; but it must be observed that the preliminary phenomena, which I hold to be of the highest importance, are there not taken into account.

Mr. Morton's experiments were instituted to determine the relative action of two extracts—the Bombay and the Cape; and it is to the relative properties of different aloes that I shall next revert. My experience has extended to the use of the three kinds of aloes, viz.:—the Barbadoes, the Cape, and Socotrine, and these always procured from the most respectable druggists; but there is a great deal of confusion as to names, and, as they differ in their purgative doses, it is well to be clear on the point. I have derived much information from Professor Morton's concise, plain, and useful work, and also read with interest Mr. Finlay Dun's elaborate chapter on the subject.

The Barbadoes Extract, so far as I have been able to ascertain, is not used on the continent of Europe, nor is it found but in the shops of English Pharmacutists that have imported it from England. Confining my inquiries to France, Italy, Switzerland, and Germany, all the best apothecaries there, both for human and veterinary medicine, dispense an extract which receives the name of Aloë Socotrina. After much pains to collect information at different places, extending over a long period of time, I find that the only reliable aloes in their estimation is the Socotrine; but this variety corresponds in every way with the best Cape extract of the London market. Before being convinced of this, I had for many years used the drug as bought on the Continent as socotrine.

On leaving England for the first time, to practise at Naples, I took out with me a supply of Barbadoes and *true* Socotrine, knowing that the latter was less irritating and preferable for the human subject. At Naples I found every one using the so-called socotrine; indeed, none but this and the caballine were to be found. My socotrine either did not act, or, so mildly as not to induce purgation. I need scarcely say such was not the case with the purgative mass containing the Barbadoes, the active qualities of which are known to all English veterinarians.

The true socotrine is scarce, certainly not sufficient for our consumption, much less for European; and when I discovered that the aloe bought myself from a wholesale druggist at Leghorn, came not from the Levant or the coasts of Africa, but was directly imported from London, I was on the right scent to discover the truth. Mr. Morton found by his

experiments that the Mocha or Bombay extract purged more readily than the Cape, and he tells us that, "nearly all that has been sold by druggists of late years in their shops, under the name of socotrine aloes, is a fine kind of Mocha." I remember that it was through Mr. Morton my first samples of socotrine were obtained, and have no doubt they were genuine, but my experiments were not carried out long enough to adopt the proper doses of the drug.

There are therefore three extracts, Barbadoes, Cape, and socotrine, holding their respective positions as first, second, and third, for activity. I have witnessed the worst effects from the administration of drastic purgatives by trainers and grooms. Horses so abused at the commencement of training have been deprived of all chance in a race. The effects of a drastic purge may be such as to disconcert a horse for a week or more, and by imprudent work, fifteen or twenty days may elapse before he recovers his tone. I must say I have observed this alone to occur with purging masses containing Barbadoes; a fact that has caused me tenaciously to hold on to the Cape. Whereas the Cape aloes were formerly recommended at the Veterinary College, practitioners did not speak favorably of them, and it was said the professor used them because less costly, hence arose a mistaken prejudice. Coleman himself did not, it is true, base his preference on any peculiarity in their action, but said, "Cape aloes being the cheapest, are least likely to be adulterated—a cogent idea, with which I agree so far as it went, though at the time could not see it so; but I prefer the Cape aloes, not because they are cheaper than Barbadoes, but because equally certain in operation, and derange the system less. I cannot sufficiently eulogize the late lamented Mr. Percivall's chapter on the 'Effects of Aloes,' in his published reports on the effects of medicines. It evinces an impartial spirit of investigation; he says, of the above-mentioned extracts, that in their efficacy the only difference he could detect is, "that the Barbadoes is, about in the proportion of a drachm to the ounce, stronger than the Cape." "I can, therefore, only repeat," says Mr. Percivall, "that would practitioners make allowances for the *form* in which aloes is given, and the *circumstances* under which it is given, and at the same time pay attention to the *quality* of their drugs, much, most, or all, indeed, of such conflicting testimony, would fall to the ground.

The practical deduction I have arrived at, however, is, that adhering to the one or to the other of the aloetic extracts is perhaps not so wise as using the kind most applicable in a

particular case. We cannot, I believe, so regulate things as to ensure the same result from a modified dose of the one as by extending our range of choice. Is the fine and more gummy socotrine, possessed of milder properties than the rest, to be recommended in the case of a young, ill-conditioned, and weak horse, in which an active or drastic drug would prove fatal, whereas a more bland one would prove highly beneficial? Trainers in Italy have had recourse to the purgative mass I had in my Pharmacy, and extolled its use above all others after long experience in the use of the Barbadoes which proved less manageable and not more certain to attain the desired end. The Cape extract produces copious purging, but less *watery* evacuations than the Barbadoes, and the action of the bowels is not so long kept up. These we consider decided advantages, for I know of no case where a protracted purging is desirable in the horse, whereas I see in it many causes for objection and fear.

Much is said of the preparation of a horse for a purge, and the questions mooted are—How long is a horse to be fed on mash? How much exercise during the operation of a purge? And when may he be put to work after its operation? We all know there is oftentimes no chance of preparation, and when there is, little need is there for sloppy mash, which, beyond making a display, are not to be recommended in preference to a few hours' abstinence. As to after treatment bran mash is often loathed, and at most required in small quantities. A handful of hay at intervals and plenty of chilled water should be used. Respecting the water, the following anecdote may prove as instructive to others as the case did to me when I first saw it; which induced me ever after, in treating sick horses, to pour a little water into a horse's mouth after the exhibition of a ball. In 1823 or 1824, when a student at the St. Pancras College, I was one day assisting at the post-mortem examination of a horse that had died in one of the open sheds—I believe of pulmonary disease.

On cutting open the œsophagus, about six inches from the cardiac orifice, a ball was found which had been administered about two hours before the horse died. The ball, wrapped in ordinary paper, had suffered no change; neither moisture nor warmth had exerted any influence. The incident, of little importance as regarded the fate of that horse, has since been to me a valuable lesson. The œsophagus was free from stricture or any other disease, and the stoppage of the ball was alone due to the atonic state of the contractile coat, and absence of mucous secretion necessary for deglu-

tition. To give a horse a drink of water we hold to be good practice even in health after a ball of any kind, when it has been swallowed; but where there is considerable departure from the normal state it becomes very advisable.

Referring lastly to exercise, except in cases of horses in health it is mostly injurious, certainly not necessary. An hour's walking the next morning is enough under all circumstances for horses in any condition.

According to promise, I have next to relate cases, some of many that have taught me as much and more than I have now said on the subject of purgatives and clysters in the horse. It is therefore for the complete exposition of my practice, I begin with—

CASE 1, of an old horse, one of a pair belonging to a dignitary of the church in Naples, and generally put to very little exertion. In the summer of 1826 I was requested to see the above animal, poor in condition, but, though old, he had been healthy until the present attack of colic, which was associated with gaseous distension of the abdomen, *tympanitis*. I instantly gave a dose of the best Barbadoes aloes, and administered clysters, which were kept up at intervals during the day. Much dung was passed in a loose, coarse state, and having an offensive smell. I attributed the attack to bad, indigestible, hay and other food, and it was not until the day after that I became fully aware of the cause and nature of the disease. Soon after the first injections were given the spasms abated; as the day passed on the tense state of the abdomen diminished, the muscles felt lax, and the horse appeared at his ease. Clysters were continued at intervals of an hour, some tepid water was given him to drink, and in the evening he was so much relieved that I did not see him until daylight next morning. On entering the stable it was perceived that purgation had set in during the night; the evacuations were watery, with coarse, undigested pieces of straw and hay intermixed, but the most extraordinary feature was a large quantity of black seeds dispersed on the flat pavement, very similar to those of the melon. They were discovered to be the seeds of the carrubbi pods.* In the

* The carrubbio, my son tells me, is a cruciferous plant, the *siliqua græca* of systematic writers on botany; its fruit is a kind of pod, technically termed silique, longer than broad, containing the above seeds attached to a central frame, from which the valves separate. The carrubbi grow as trees in the kingdom of Naples. The pods of a brown colour, are sold, in the dry state, as food for hackney-coach and cart horses, to be given them broken up and mixed with bran. The pods contain a sweet pulp, and the flat seeds are black, and very hard, being protected by a peculiarly tough

course of that day, although they were not collected, I consider that about half a bushel of these seeds were brought away with the otherwise watery evacuations. The clysters had been discontinued the evening before, and the horse regained his tone as from an ordinary purge.

CASE 2 occurred in Florence in the summer of 1830. A little, native, horse, the property of Mr. Pitti, now the director of the Granducal stables, was suffering acutely from spasmodic colic. I was called to him in the forenoon, when he was rolling about in a profuse perspiration, and presenting the most discouraging symptoms. At once six drachms of the best Cape aloes were given in ball, and used clysters of warm water and oil. I watched my patient; and the owner being present, was constantly asking my opinion as to the issue—whether I had administered diuretics? whether I should bleed? &c. I had then, for some time, had considerable success in the treatment I was pursuing, but the case was one most acute, obstinate, and for three hours gave no positive proof of amendment, hence no grounds for a favorable prognosis. I patiently watched and assisted my patient, inspiring as much confidence in the owner as I could prudently without compromising myself. No fæces were voided with the injections, except one or two small, compact balls, thickly coated by a dense white mucus. Besides the aloes, I administered nothing but tepid water, which was poured into his clammy mouth as he lay, in the intervals between the paroxysms of pain. Dry friction was used with linen cloths, and in about three hours I began to see some improvement; the spasms were less severe, of shorter duration, and the intervals of quiet longer; the pulse more full, the abdominal muscles were more relaxed, and the periodical sweatings ceased, and some dung was expelled with each enema. In the fourth hour from the commencement I could see marked and progressive improvement. Not so the bystanders, who, whenever the horse lay relaxed and flat on his side for a long time together, thought he was dying. I was then able to assure them that all was going on well, and at length, after lying quiet for about twenty minutes, he showed an inclination to rise, in which he was assisted, and after stretching and shaking his body, he staled copiously. The horse was hand-rubbed, made dry and comfortable, and no untoward symptoms

cuticle; they are probably never digested, but pass on with the ingesta, and may always be seen in the dung of horses fed on the carrubbi. The above is the only case I have seen of spasm, the result of accumulation of the carrubbi seeds.

returned. The injections were continued at intervals of an hour or two, and with each some fæces were expelled, increasing in quantity, diminishing in density, and the mucus that coated it disappearing.

On examining the fæces, the cause and nature of the disease was made clear; as usual, they contained badly masticated and undigested food, coarse hay, with long pieces of the bottom and hard ends of new wheaten straw—it being just after harvest. I pronounced the horse free from danger and left him. The next morning he was purging, and being kept quiet in his loose box on a well-regulated diet, was in perfect health from that time.

CASE 3.—A black entire Roman coach-horse, belonging to a Florentine hackneyman—a very bad horsekeeper—became the subject of a severe attack of colic. This individual's stables had afforded several such cases from the just-mentioned cause. There was in the instance before us much intestinal fulness from the coarse, bad hay, bran, straw, and little corn given to this overworked animal; indeed, such were the prevalent causes of gripes amongst these animals, but I found that a new element had been introduced, and a sour glutinous residue of wheat from a starch-factory had been given to the poor horse we are speaking of, with certain others.

The case looked almost hopeless, the abdomen being extremely tense and distended, and the paroxysms of pain most violent. Six drachms of Cape aloes were at once given, and clysters used. The latter acted with exceedingly good effect, some offensive fæces being voided with each. Shortly, improvement was evident, and in three or four hours the colic had subsided, the abdomen feeling relaxed and less distended. I ordered the horse to be kept quiet, gave directions about food and warm water, informing the people that he would purge the next day, and that he would require two or three days rest at least.

I returned to visit my patient next morning; the helper told me that the horse was quite well, had fed well, and his master had sent him out on a day's job with a carriage. I turned away excessively annoyed, and heard no more till the evening, when I was informed that the poor animal had returned exhausted after a day's work, and died a few minutes after getting into the stable. The post-mortem examination revealed a laceration of the colon, with escape of the contents of the intestine into the cavity of the peritoneum. The other viscera of the body were healthy, the hollow ones being nearly empty, flaccid, and free.

CASE 4.—While travelling with a number of horses in the summer of 1839, I had a four-year old mare that was attacked with colic on the top of the Simplon mountain. It was a fair day's work for my horses to travel up, but after refreshing them it was indispensable for me to descend the other side, for want of accommodation at the inn for the large number of twenty-five horses. I was placed, therefore, under the worst conditions to treat an ailing animal. I restricted my treatment to clysters, watching the symptoms, which were truly urgent. The fæces which were brought away with the injections were found to consist of coarse, undigested masses of hay and straw. For four hours that I stayed at the inn, the clysters were constantly used at varying intervals, and I did nothing more beyond attending to the mare's comfort, and giving her a pailful of warm water, in which was thrown about half a peck of fresh bran, allowing her, however, to drink the fluid part only, with the farinaceous matter it suspended. The colicky pains thus gradually gave way to clysters alone, and the mare being eased and refreshed, was led with the other horses the next stage, and with continued care to diet she remained well.

In the mountainous districts, as through the valley from the Lake of Geneva to the Simplon, I have found a fertile source of many derangements of the digestive organs in the forage, and especially in the hay and straw. The first of these is often hard, wild grass; but mostly rushes, whilst the straw is of rye, clean, tough, and woody, which at the end of the summer is new and sweet. The horses travelling long journeys eat, and require, a liberal quantity of good hay; and not getting this, they eat the litter or anything they can obtain. Such was the case with the mare just spoken of.

CASE 5.—A young, entire, thoroughbred horse, the property of the Marquis of Pucci, of Florence, fed and took his exercise as usual on the morning of the 28th of July, 1848. At eleven o'clock a.m., he began to show the first symptoms of spasmodic colic, and the coachman gave some injections, and walked the horse about. I was sent for, but being in the country did not reach the stable until four o'clock, when I found the animal standing in his loose box, being prevented lying down by several persons in attendance. The following alarming symptoms presented themselves:—cold sweat, with haggard and exhausted countenance; extremities cold, conjunctiva injected; pulse quick and indistinct; with much convulsive agitation all over the body.

To a few hasty questions, I received the following answers:

The time of the first attack was at half-past eleven o'clock. Injections had been given, but no fæces had been expelled. The hand had been passed up the rectum, which was found empty. The horse had been walked during the excessive heat out of one of the town gates—the Porta alla Croce—it being market day, to put him in a sheep fold, to induce him to stale, *but with no effect, of course*. He was then walked about for half an hour in a field; but the best of all the answers was, that no internal medicine had been given.

On hearing this, a few seconds only having elapsed since I entered the stable, I administered an ounce and a half of my purgative mass, that is to say, one ounce of Cape aloes; changed the wet clothing, ordered all hands to leave the patient, and set him free, when he fell down as if shot. Having done these essential things, and watching my patient more minutely, in reply to further interrogations, I was informed that the horse had been bled before my arrival. I saw the blood, about three quarts, an emission which was to have been repeated had I not arrived.

Looking calmly at the case, and the progress of the symptoms, I could see but slender hopes of a successful termination; the patient had been five hours getting worse, and I feared that some displacement of the intestines had occurred. During his pains, and even in the intervals between the spasmodic attacks, he made the greatest attempts to lie on his back, and placing his legs against the wall, succeeded in balancing himself there, frequently struggling, however, but without moving himself out of that position; except in the more violent efforts, and then only for a moment.

Waiting patiently, giving an enema occasionally, and using all care to prevent him injuring himself in his struggles, in about an hour from the time I gave the medicine, I began to cherish hopes, from several improving symptoms then perceptible. The intervals between the spasms were longer, the pulse becoming fuller, softer, more regular and distinct; the ears and head became warm and dry; and the surface of the body likewise had ceased to throw out the cold, deadly sweat. About two hours from my first treatment the horse lay quiet, his nostrils were still; the pulse improved; and all muscular twitching of the body had ceased. The mouth being dry, I ordered a pail of warm water and a bottle to be brought, and began by opening his lips, to pour the water from the bottle, and as he eagerly drank it, he lifted his head up after it, looking for more. I gave him six or seven bottlefuls in succession; he afterwards lay quiet for a few minutes, then rose, sighed, shook himself, and staled, to the great delight of the

lookers on, who considered the non-staling the essentially bad feature of the case.

The animal again showed slight twitching pains; he laid down, and stretching himself at full length, discharged much flatus per anum, and then remained quiet. He continued prostrate, resting himself for nearly an hour, when he got up perfectly recovered.

I had the horse quietly dressed with linen rubbers; gave him a pailful of warm water with a quartern of fresh bran in it; he eagerly drank the former and ate the latter, and staying there until ten o'clock, left him, being assured that he was completely relieved.

The five cases just related, to which many more might be added, clearly prove, I think, that sometimes clysters alone, and mostly clysters and purgatives, fulfil our requirements in spasmodic colic in the horse. I do not mean thoroughly to discard the simple collateral means which I have adopted in my practice, but what had to be proved was the true effect of aloes and injections alone, so far outweighing in worth, in fact, completely doing away with aromatics and other specifics. In the estimation of some, opium is the sheet-anchor, in union with aloes in solution, spices, and other stimulants. Should some of my readers think the cases recited are exceptions to the rule, they may alter their opinion when I tell them that during my long-continued and extensive practice, the only animal I ever lost after true colic was Case 3, which I have expressly cited, the animal being killed through the imprudence of an unfeeling owner, just as he might have been under the operation of an ordinary purgative in health. To those who extol opium, which to the knowledge of all checks, instead of favouring the evacuation of the intestines, I should recommend the careful observation of the sedative and relieving effects of aloes manifested promptly and successfully as they invariably are.

16, UPPER WOBURN PLACE.

A CASE OF RUPTURE OF THE COATS OF THE RECTUM.

By W. T. STANLEY, M.R.C.V.S., Leamington.

I was requested, on the 15th November last, to attend a hunter that had been suddenly seized with illness, the pro-

perty of a sporting gentleman in this town. On my arrival, I found the animal in great pain, unable to move his hind extremities, yet resting slightly on both toes of his hind feet. The respiration was quick and painful; the pulse between 60 and 70; the countenance anxious; and the skin bedewed with perspiration. On inquiry, I found that the horse had been out hunting the day previous, but he came home perfectly well, had fed well during the night, and had also taken his usual rest. He had likewise been fed in the morning, and was then taken out to exercise. He went out perfectly sound, and appeared to be well; but after being out a short time he began to go stiff of his hind legs, and was consequently brought home to his stable.

From the symptoms now present, I was inclined to consider it to be either a case of spasmodic attack of the neck of the bladder, or paralysis of the lumbar muscles; but not being perfectly satisfied as to its nature, I determined upon examining the rectum, and after having removed some hardened fæces therefrom, on the return of my hand, I found it to be smeared with blood of a bright florid colour. After clearing out the rectum, I further examined the gut for the seat of the injury. Passing my hand up, and directing it inferiorly for some length, I could not find any lesion; but on a closer examination of the superior part, inclining to the left side, and about six inches from the anus, I discovered the rectum to be completely ruptured. The wound being of a circular form, admitted the passing of my forefinger its entire length, by the side of the sacrum. From the nature of the injury, my opinion of the case was unfavorable; but as the lesion was evidently recent, and the upper portion of the intestine the seat of it, I informed the owner that there might be a chance of recovery, though only a slight one.

I at once ordered fomentations to be constantly applied over the hind extremities, abstracted four quarts of blood, administered a very mild laxative, ordered the horse to be kept perfectly quiet, and the diet to consist of bran and bruised oat mashes, no hay being allowed.

The fomentations were continued without intermission for twenty-four hours, when a fresh sheepskin was applied all over the loins and quarters. This was renewed every twelve hours; and I kept them applied for ten days, during which time the horse never laid down. At times the symptoms gave one but little hope that he would ever recover. His pulse rose to 90 on the fifth day, and was wiry at the jaw; the breathing was often painful, and particularly so after evacuating his dung, which was voided in very small quantities, but

which, from his diet, was pultaceous; the extremities were cold; the mouth clammy, and little or no appetite for food was evinced; but he drank freely of gruel. I now began to give stimulants; but till the tenth day there was no material improvement, after which, however, the animal rallied. His pulse became softer and more regular in its beats; less pain was manifested when voiding his fæces, which, however, were still passed in small quantities; he also was able to move round his box, but was still very stiff of his hind legs. At the end of a fortnight or so, the inflammatory symptoms appeared to be arrested. The pulse became gradually more natural, the appetite tolerably good, and he now lay down for one night.

After the sheepskins were discontinued, I applied mustard cataplasms upon and on each side of the sacrum, immediately over the seat of injury.

The horse went on favorably, so far as life was concerned, and all dangerous symptoms had disappeared at the end of a month; but at that time he still went very stiff on his hind legs, and the muscles on each side of the sacral portion of the spine showed loss of power and substance. The left side was the first to waste, over the seat of the lesion; and which occurred in about six weeks from the time of the injury. The muscles were completely atrophied along the whole extent of the dorsum, or spine, from the sacrum to the withers. To this considerable œdema of the sheath supervened. The horse during this period had never been seen to lie down but once.

About two months from the first indication of illness a large abscess formed in the sheath on the off-side, which suppurated freely; and after this my patient daily improved, and gradually regained his strength and condition. The alvine evacuations likewise began to increase in quantity, and eventually, in about ten weeks, they became natural and regular. The horse is at this time so far recovered as to be able to carry his owner, as a hack to cover, and his action is not in the least impaired; but he is rather weak on his hind legs, the muscles of the spine not having as yet filled up, but that they will do so, I have no doubt, in the course of the spring.

Remarks.—Cases of this kind terminating successfully I believe are of very rare occurrence. I think I may attribute the favorable result in this instance, first, to the case having been early attended to; and, secondly, to the situation of the rupture being at the superior part of the intestine. Respecting the *cause* of the rupture, it may be argued that it must have occurred the day the horse was out hunting. I am not of

that opinion, having seen several similar cases, and the animals have always shown precisely the same symptoms that this patient did at the time of the injury occurring. Moreover, the blood that was effused in the rectum was of a bright scarlet colour, which evidently showed the lesion to be of a very recent occurrence. Had it happened the day previous, the horse could not have been ridden home ten miles, and the blood also would have been found coagulated. It perhaps may not appear quite scientific to have abstracted blood on account of a lesion of this character; having seen, however, two instances of similar ruptures of the rectum, but which occurred at the inferior part, and which terminated in gangrene and mortification of the entire extent of the coats of the intestines up as far as the stomach, and which animals lived for a month, I resolved, if possible, as the only chance of saving my patient, to bleed, and adopt those measures which were likely to prevent the inflammation extending.

As to the cause of the rupture, I am inclined to believe that it was produced by a sudden spasmodic contraction of the muscular coat of the rectum to evacuate some hardened fæces, which resisted this action, and thus caused the lesion. These cases are generally considered fatal, and I never knew one to recover before; but invariably, in these small ruptures, the symptoms are so obscure, that at times the lesion is not discovered, and inflammation and death follow.

I have seen several cases of small circular ruptures of the jejunum and ileum, which have been caused from constipation; and in which the ruptures have been so slight that the animals have lived for several days after. In cases of a laceration of the coats of the intestines, death generally takes place *in forty-eight hours after*.

ACUTE INDIGESTION, CAUSED BY THE SWALLOWING OF EXTRANEIOUS SUBSTANCES, PRODUCING PARALYSIS AND DEATH.

By the Same.

THIS patient was the property of a respectable builder in this town, who purchased the horse on the 5th of February, and having worked him all the day, put him at night into a stable which he had just completed building, and which had

not before been used. The horse was fed liberally on beans and oats, and on the following morning was again put to work to draw bricks. After being at work a short time, he suddenly staggered, fell, and died.

On making a *post-mortem examination*, the stomach was found to be very much distended with undigested oats and beans, mixed with which was a very large quantity of extraneous substances, similar to these I send you, and which, as you will perceive, consist of stones, pieces of coal, carpenter's nails, and buttons. These things had, without doubt, been incautiously left in the newly-made manger, and the horse's corn being thrown in amongst them, the animal being hungry and low in condition, swallowed them with his food. It is somewhat singular that no symptoms of choking were observed; and it is probable that death was caused by paralysis of the stomach, induced by the presence of so large a mass of indigestible matter.

EXTRAORDINARY ENLARGEMENT OF THE LIVER OF A COW FROM THE PRESENCE OF HYDATIDS.

By J. B. GREGORY, M.R.C.V.S., Petworth.

THE morbid parts I send were taken from a well-bred short-horned cow, six years old, estimated to weigh, when fat, 125 stones of 8 lbs. She was purchased in August last, with a warranty to calve in November following. On September 2d her owner called on me, and wished me to give her some medicine, as he thought she was not quite recovered from the effects of being driven sixteen miles. The medicine I sent had a beneficial effect, as the cow's appetite returned, and she appeared to be quite well again. After this I heard no more of her until 6th January last, when I was requested to go and give my opinion as to her being in calf, it being two months beyond the time she was expected to calve. I found that her appetite and rumination were natural; the pulse regular, and the kidneys and bowels acting well. There was, however, a peculiar expression of her countenance that told of continuous pain, her eyes also were sunk in their orbits, and she had a frequent and troublesome cough. Her skin likewise had lost its pliancy, and she was sadly out of condition, but no yellowness of the mouth or eyes was present. I first examined her abdomen externally, by percussing

the right side, with a view of determining her pregnancy, but the body that my hand came in contact with was too large for, and had not the feel of a fœtus. As the cow had occasionally been observed to strain, I was now induced to examine her *per vaginam*, when I found the os uteri to be indurated and unyielding; I could also distinctly feel a round and hard substance, about the size of a large cricket-ball, and which I supposed to be the right ovary; the other one, however, I could not find. I told the owner that the cow was not in calf, unless it were extra uterine, and that in all probability the mass we could feel from the outside was a tumour within the abdomen. I also added that medicine could do no good in such a case. He at once decided on having her killed, which afforded me the opportunity of making a post-mortem examination. All the viscera were healthy, with the exception of those I send. The liver, as you will see, is the organ principally affected. It weighed, when first removed, 146 lbs. Its great size led to its encroaching on the space occupied by the other viscera, all of which were more or less compressed. It did not adhere to the side of the abdomen, but was firmly attached to the diaphragm, and also in places to the intestines. In my examination I had the assistance of Mr. Hearn, M.R.C.V.S., who was recently your pupil, and who has, I believe, also written to you on the subject. The cause of the enlargement of the liver is evident enough, being produced by hydatids, but I leave to you to describe the variety to which they belong. I have attended post-mortem examinations of many cattle since 1828, but never met with anything like this before.

[The description given by Mr. Gregory leaves us but little to say respecting this extraordinary enlargement of the liver. As stated by him, the sole cause of its increase in size was due to the presence of an immense number of hydatids in the substance of the organ. These entozoa belonged to the variety designated the *Acephalocystis endogena*, and each cyst contained within it a considerable quantity of the so-called *Echinococci*. In the 'Transactions of the Veterinary Medical Association for 1842-3,' a similar case is recorded as occurring in a pig, which is illustrated by a coloured plate, and which may be said to depict equally as well the condition of the liver of the animal in question.]

dominal cavity, and which had escaped from the stomach through a rupture in its coat near the cardiac orifice. The rent was from three to four inches in length. The walls also of the stomach were very much thinned, especially at the part where the rupture had taken place. On examining the duodenum I discovered, at a short distance from the pylorus, a perforation through its coats, about the size of a sixpence, evidently the result also of ulceration. There were several other ulcers, in the immediate vicinity of this one, partially extending through the intestine. Many dark-coloured spots in different parts of the small intestines were likewise met with. The liver was of a yellow colour in some places, and the gall-bladder was filled with a dark-coloured bile. All the other viscera of the abdomen were perfectly healthy; the lungs also were normal, but the right ventricle of the heart was dilated to three times its proper size, and its walls were very thin.

I have sent you the uterus and stomach, and also a portion of the duodenum, and I shall feel much obliged if you will favour me with your opinion on the subject, as I deem it a matter of some importance to ascertain whether the amount of calomel given would be likely to occasion such extensive lesions in the time specified.

I have no doubt that the disease of the uterus was the primary affection under which the animal laboured, and which called forth the treatment by the owner; and that the rupture of the stomach was the immediate cause of death.

[The ulcerations of the intestine, in this case, had every appearance of being produced by some local agent, and we think it more than probable that the large dose of calomel was their proximate cause, this agent having been administered to an animal whose system had already given way under the debilitating effects of chronic uterine disease. We have often had occasion to condemn the exhibition of calomel to the dog in the large doses it is frequently used. The cause of the rupture of the stomach was not very apparent, and its coats, although attenuated, gave no indications of being affected with ulceration or softening.]

CASE OF LACERATION OF THE ŒSOPHAGUS.

By CHARLES MARSON, M.R.C.V.S., Hertford.

A FEW weeks since my opinion was asked respecting a cow, said to be choked. Upon making inquiries as to the cause of the owner's suspicions, I was informed that the animal had been feeding upon Swede turnips, and that a portion of turnip had become fixed in her "wizzen," (œsophagus;) and that a cowman, a reputed hand in such matters, had been called in, who had pushed the piece of turnip some distance down the throat.

The poor animal I found, on my arrival, to present the symptoms which usually are seen in cases of laceration of the œsophagus; they were as follows: Head protruded; nostrils expanded, and eyes protruding from their sockets; the breathing laboured and heavy, accompanied with moaning; neck also stretched straight out and stiff. The abdomen was distended with gas, and the whole of the upper part of the body, from the setting on of the tail to the ears was emphysematous; the neck was particularly so, and especially in a line with the œsophagus. When an attempt was made to move the animal, she staggered and was near falling. Feeling convinced that the œsophagus was lacerated, I gave it as my opinion that there was not the least chance of the animal's recovery, and that, in fact, she had better be destroyed or she would soon die. This advice was immediately acted upon, and upon my laying bare the œsophagus, a rent was found in it from four to four and a half inches long. Every coat was torn asunder, the edges of the laceration being very ragged. A few inches below the lower end of the rent, a small piece of the wooden bulb of the instrument which had been used was found. It was covered with coagulated blood. A little further on a square piece of turnip was still fixed in the œsophagus. It appears that the man had tried his probang, which was made of cane, and tipped with a wooden bulb, twice. Upon the second trial, as I should imagine, he had not secured the animal's head in a proper position, and forcing away, as many of these persons do, more like loading a cannon than anything else, thrust the instrument completely through the coats of the œsophagus.

As it was supposed that the obstruction was removed, some water was horned down the animal's throat, but which of course was not properly deglutated, but passed through the laceration. Not only was no relief obtained, but the owner

was astonished to see the cow becoming rapidly worse after the operation. She was a very nice half-bred, short-horn cow, and an excellent milker, and had a short time previously been bought for £17. She proved to be about five months gone with calf. I should not have troubled you with the details of this case, but, knowing that your valuable *Journal* frequently finds its way into the hands of farmers and breeders of stock, I have thought that perhaps its narration might tend to lessen such occurrences.

THOUGHTS ON INFLUENZA.

By G. ARMATAGE, V.S., Sheffield.

(Continued from p. 139.)

RESPECTING the *nature* of influenza, I believe much diversity of opinion exists. For my own part, I class it under the head of "low typhoid diseases," the accuracy of which, I think, will be fully confirmed by the facts mentioned in my former paper, as well as from the treatment. That it is a congestive disease is also proved by the circumstance of the extreme debility and oppression, together with the nearly total absence of lymph in the post-mortem appearances. And that it is not inflammatory, by the fact that inflammation, purely so, cannot exist at the same time with debility; the latter always following the former as an effect on the shock produced upon the system by the destruction of the balance of the vital forces.

Some time ago I was requested by a young professional friend to examine a case of influenza with him, which he had had under treatment some time, and about which he was extremely anxious. After detailing to me the symptoms he had noticed, he remarked, with all the sedatives he could muster to his aid, that the pulse defied all attempts to reduce it in frequency and strength: it lost its volume, and the mare sank. Opium had been employed to relieve the spasms; and although solution of aloes was extensively employed, no purgation ensued, or the slightest response of the bowels. Bleeding had been resorted to at first, still all was futile.

So long as this complaint is considered an inflammatory one, no doubt the above treatment is the most consistent; but I am inclined to designate it "wholesale slaughter," for

only those animals possessing adamantine constitutions are able to withstand it.

During the whole of the past year I have had no lack of influenza of the above character. It has proved an interesting engagement, and by it I find that the *treatment* which only saves the lives of animals so affected, is that for general weakness and emaciation, and the very reverse of bran mashes, physicking, the use of sedatives, and the lancet. The pulse rising so high in number of beats, becomes correspondingly weaker in tone; and nothing but stimulants will cause it to re-assume the proper regularity and strength.

When first this disease was noticed, I frequently found the negative results of the treatment then adopted, I was more and more convinced each time that I was forming a wrong conclusion, or good would have resulted; this led to a more serious consideration of it. It is, therefore, my practice now, when called to a case of supposed colic, to look for something more, and in forty-nine cases out of fifty, I am able to detect its origin in congestion of the lungs and impairment of the nerves which supply them and the intestines. The pulse also furnishes a most certain result of the goings on within, and I treat accordingly, not in homœopathic doses, they will not do here, but large ones; half measures being anything but tolerated. The blood-vessels are in a state of atony and relaxation, and their coats are attenuated by the pressure from within: supply therefore the means of enabling them to contract upon their contents, and the result will be manifest. Of Spt. Ammon. Aromat. et Spt. Ether. Nit., as much as two ounces of each, will often be needed, combined with half a drachm or a drachm of Ext. Belladonnæ; this should be repeated in a few hours, so as to overcome the congestion and its consequences, viz., spasms and the cold extremities. If constipation exist, the Ol. Lini, combined with the above, and sometimes a few drops of croton oil, which, by being added to the Ol. Lini is modified in its action, may be given, along with enemas. Aloes and opium, in this state of affairs, are more productive of coma and stertorous breathing than otherwise.

If tympanitis exist, which it does sometimes to an alarming degree, solution of the hypo-sulphite of soda, in the form both of draught and enema, will dispel it speedily by the liberation of sulphurous acid in the stomach when in contact with the secretions. Allow me to state here, *en passant*, that those who have not already used this salt, would do well to do so in their cattle practice, since in hoven the most decided results follow its employment. I believe the introduction of this salt for this purpose originated with Dr. George Wilson, late

Lecturer on Chemistry at the Edinburgh Veterinary College, and at that time many very decided results had occurred from its use in human practice.

The cough is best relieved by a modification of the above treatment, viz., stimulants in a solid form, such as Ammon. Carb. given twice daily, with small doses of Belladonna, to counteract the irritant action, along with Pulv. Scillæ vel Gentian. When tonics and diuretics are indicated, Resina Com. best supplies the place of nitrate of potass. It is not such a depletive; is more gentle in its action, and does not lower the system to the same extent.

So far is this stimulating treatment required, that although suppuration goes on, and fever is present to some little extent, yet the weak form of the latter, and the tardiness of the former urgently call for it. To hasten the process of suppuration is to effect a cure, for recovery speedily follows.

With respect to blisters, I place them amongst "slaughtering" agents. They increase the irritability of the system, favour internal congestion, and never accomplish any good. I have found what is termed a rubefacient by far the most useful, and that only applied to the throat, where it often facilitates deglutition. The chest I have found not to require any blisters; setons and rowels are excluded, for the same reasons. If deglutition is much impaired, gruel, hay, tea and malt or barley, beans, &c., well boiled, will form the best food. According to the urgency of the symptoms, any operation which surgery may furnish may be adopted.

In fact from the very commencement a steady perseverance in gentle means to promote the action of the bowels by bland fluids and stimulants, with good food, such as before mentioned, and turnips, carrots, or any other article which will contribute to the general nourishment of the system, may be allowed. The appetite is to be provoked by all possible means, and warm clothing, cool air, and well-ventilated stables enjoined. The last I consider one most important object to bear in mind, and when not attended to, is one of the principal causes of this disease.

Disinfectants are of great importance in the sick stables, also admission of light, as much as possible, and freedom from collections of dung and urine.

The diarrhœa, which sometimes ushers in the attack, is best relieved by alkalies, such as Sod. Carb. given in solution or bolus, followed by the stimulants and tonic diuretics. If effusion be present, the stimulants are also given, and along with them the Pil. Hydrarg. cum Ferro,* under the use of

* Morton's 'Manual,' p. 283.

which, the system recovers most wonderfully, and without that effect which is generally expected in using mercury, viz., "ptyalism;" nor indeed is its use needed so long as to cause it.

A CASE OF AN ANIDIAN MONSTER EXISTING WITH TWIN CALVES.

By W. SNOWDON, Slingsby.

HAVING read an account of "Anidian Monsters" in the June number of the *Veterinarian* for last year, and one having been sent you by my old master, Mr. Bowman, of Howden, I am induced to forward you a similar specimen, which I have just met with.

The particulars are as follows: On the 30th of January, about eight o'clock a.m., a cow, the property of Mr. Hicks, of Slingsby, produced a healthy female calf. Nothing unusual was observed during the day, but about six p.m. the owner called upon me and wished me to look at the cow as she was in pain, and he thought that something like another calf was making its appearance. I went immediately, and found a membranous sac hanging from the vagina to nearly as low down as the animal's hocks. I immediately punctured it, with a view to give exit to the fluid it contained; a small quantity only escaped. This brought to light the *lusus naturæ* attached to the placental membranes by an umbilical cord. I divided the cord, and after having removed the membrane, I observed that the cow was still in pain; I therefore made an examination per vaginam and found that another calf was in the uterus. I gently pushed this foetus forward, and succeeded without much difficulty in bringing it away, although its breech was presented and its hind legs were placed under its belly. It was a male calf, larger than the first, and finely proportioned, but dead. The cow required little or no treatment, and continued afterwards to go on well.

[As our last year's volume contained a full description of these "Anidian Monsters," by Mr. Gamgee, it is almost superfluous to give a minute account of this specimen, differing so little as it did from others of the same class. Its shape is that of a flattened ovoid, having a thickness, which is pretty uniform throughout, of about two inches, and measuring in its long

diameter six, and in its short four inches. Speaking generally, it may be said to be covered with long hair of a red colour, but on one of its borders, where the umbilical vessels entered, is a hairless spot. On the opposite border is the rudiment of a lower jaw, which contains four well-developed and perfectly formed incisor teeth; three of which have cut the gum. By the side of this a lip-like projection exists, evidently the analogue of the upper lip, and on raising it a piece of mucous membrane is brought into view, which is crossed by rugæ similar in arrangement to those of the palate of the perfect animal. A little above the rudimental jaw, and on the right side, is a small cartilaginous ear; and just below this, and a little behind it, a nude spot exists having somewhat the form of eyelids. On the opposite side some long hairs represent the other ear, but no outline of an eye can be detected. Several ossified spots can be felt, one of which has the form of the bones of the skull, but as a whole the Anidian is spongy and elastic to the feel. Its weight is 14 ounces avoirdupois.]

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Lecturer on Veterinary Medicine and Surgery, London.

(Continued from p. 152.)

FUNGOID DEGENERATION OF THE GLOBE OF THE EYE IN A COW—EXTIRPATION—CURE.—My friend Saint-Cyr, assistant clinical teacher in the School of Lyons, relates an interesting case of organic disease of the eye, which he observed in a cow that entered the College Infirmary the 22d of March, 1855. Six months previously she had been purchased, just as badly affected as she was at the time of admittance into the hospital. A tumour bulged from the left orbit, the eyelids were thick, indurated, and closed over the growth; their free margin and mucous lining were the seat of soft, bleeding, painless excrescences which completely hid the eye, converted as it was itself into a mass of fungosities bathed in fetid and sanious pus, which constantly oozed out of the orbit. At the base of the ear, moreover, was an ulcerated tumour, three or four lines in diameter, yielding an ichorous discharge.

The cow was in fair condition, gay, and fed well, furnishing about nine quarts of milk daily.

The apparent absence of cancerous cachexia, only slight pain, led M. Saint-Cyr to think the tumour non-malignant. He resolved on operating, and began by incising the small tumour at the base of the ear; then, with reference to the eye, he made a circular incision round the margin of the lids, dissecting back to the brim of the orbit, and continued his dissection, separating the ulcerated membrane from the degenerated osseous parietes of the orbit, penetrating deeply into this cavity, by passing the blade of the knife round the diseased mass. This was held out with a hook, and the whole carefully excised. There appears to have been much pain, but no bleeding; tow, imbibed with alcohol, was carefully put in the cavity, and the eyelids were brought together by three sutures to support the dressing.

The globe of the eye was entirely disorganized, all its appendages, as well as its constituents, formed a homogeneous mass of reddish grey colour, adhering to the osseous parietes of the orbit. It was formed of a lardaceous tissue, more solid in the deeper parts, but ulcerated, irregular, of a livid red tint, and easily broken down towards the ventricle.

After the extirpation, nothing particular occurred, the wound under the ear healed by the 5th of April, and by the 8th, the cow was discharged from the infirmary with the orbit filled by granulations, and the lids cicatrizing from their canthi.

Saint-Cyr's principal object in publishing the above case is to show the success attending extirpation; at the same time he has made some remarks on the nature of the growth, saying there have been three kinds of degenerations observed on the globe of the eye, the dermoid, melanotic, and fungoid, or sarcomatous.—*Journ. Vet. de Lyon*, May, 1855.

M. Saint-Cyr asserts at the conclusion of his remarks on the above case, that he has not examined the specimen by the microscope, inasmuch as the natural and physical signs of cancer are always so marked and easily understood that there is never uncertainty as to diagnosis. We cannot pardon him, as he wishes us to do, for not having employed the microscope, thus leaving us in doubt as to the nature of the growth, for he cannot plead as his excuse that he had not an instrument at his command. He does not think the affection was cancerous; so far as the history goes, there is every reason to believe the case was one of encephaloid. We do not contest that, in some instances, natural and physical signs are sufficient, especially after death, as in the case

published in this number of the Journal by my friend Mr. Hunting, but far be it from us to believe that such invariably occurs. Velpeau's eloquence at the Academy of Medicine, and the inconsistency of microscopical observers—the jeers of the *so-called* practical section of the medical world, and the mistaken notions of a few enthusiastic defenders of the microscope—do not in the least detract from the importance of the use of that invaluable instrument. It is not the first time that the eloquence of a Demosthenes has been used for a wrong purpose, and that warm advocates, in the heat of contention, have fallen preys to intemperance, and had to hand over justly merited laurels. Whatever M. Delafond, of the Alfort school, may say of the analogy between cancer and primordial cells and of the insufficiency of magnifying lenses, it is certainly not yet that veterinarians can speak with sufficient confidence on such questions. This I utter, anxious as I may be to claim for veterinarians that position they ought to hold as members of a liberal profession and as men of science. Cancer is one of those subjects that has most inefficiently been studied by veterinary pathologists; and if we can already say something respecting it, it is not sufficient to warrant a veterinarian to overthrow the whole doctrine of specific cells, which may, as I am inclined to believe, be reasonably modified, though certainly not discarded, inasmuch as it is based on facts adequately numerous and weighty, and sustained by men whose caution and mental worth are sufficient guarantees for the accuracy of observation and the more than ordinary soundness of their views. It must not be forgotten, or as Dr. Carpenter expresses himself, “It cannot be too strongly or too constantly kept in view, that the value of the results of microscopic inquiry will depend far more upon the sagacity, perseverance, and accuracy of the observer, than upon the elaborateness of his instrument.” Man is indeed likely to fail in observation, but if the microscope enlarges our sphere of research it confers on us advantages that cannot be questioned; and it is to its use and not to its depreciation that every right-thinking man of science should turn his attention.

Saint-Cyr would have conferred some benefit on us if, instead of dogmatically and unintelligibly styling the specimen he described *fungoid degeneration*, he had faithfully studied and published its microscopical and physical character, for every one to judge for himself. As it is, he has left us absolutely in the dark, though there be not entire absence of evidence presumptive that his was a case of carcinoma involving the tissues surrounding the point whence it first

sprang, to the complete destruction and transformation of all alike.

RUPTURE OF THE COLON IN A HORSE.—A thoroughbred English horse was admitted in the Veterinary School of Lyons, on the 9th of May, 1855. Lemaitre, a fourth year's student of the college, noted the history and progress of the case. The horse came from the dépôt of stallions of Cluny, but, for various reasons, had been castrated, in the month of October, 1854. His health had been good up to the 6th of May, when there appeared symptoms of spasmodic colic; clysters were used, but the pains persisted next day and he was bled; sulphate of soda was administered in his beverage, and an emollient poultice applied over the loins. From the 7th to the 8th, the spasms had ceased, but returned the night of the 8th, so that at eight o'clock on the morning of the 9th, the horse was removed to the college infirmary.

The pains are periodical; but even during the moments of calm there was dulness, no appetite, hot clammy mouth, tympanitis, congested conjunctivæ, small wiry pulse. The respiration normal. *The loins have an excess of sensibility.*

Soon after his admission the horse begins to paw, is agitated, and voids a small quantity of opaque and viscid urine. He stretches himself straight out and appears at his ease, but then rolls over on to his back, and afterwards strives to sit on his haunches. He rises again, paws about with his feet, and occasionally voids a little urine. The prognosis is naturally very unfavorable.

The treatment began by mucilaginous draughts, in the shape of linseed tea, and decoctions of barley, continuing a decoction of poppy heads. Two ounces of cream of tartar are likewise added, and emollient poultices with tepid enemata used. At two p.m. warm fomentations to the body, which are continued till two o'clock next day, during which period the animal appears altogether better; the abdomen is not distended; the horse, however, has not dunged.

On the 10th of May, a considerable quantity of fæces is thrown off, there are also emissions of urine; on the whole, symptoms of amelioration; there is appetite. The mucilaginous draughts, and clysters with soap are continued.

The 11th: still improved, appetite returned; but the same treatment is continued.

The outward symptoms returned with all their intensity on the 12th. A dose of turpentine is administered in linseed tea, and clysters are used.

13th.—Symptoms diminished, but the animal is dull, and

has no appetite. The treatment of yesterday is continued. On the 14th, the same state persists till three p.m., when the horse is immoveably standing, unconscious of what is going on around. The horse's countenance is haggard, the nostrils expanded, eyes prominent, and conjunctivæ livid and congested. The pulse is scarcely perceptible, though the artery be tense. There is a general tremitus of the body; the general temperature is increased; the penis hangs out of its sheath; the urine is voided in but very small quantities. *The loins are insensible to pressure.* The animal looks round at his flanks; he moans occasionally. The muscles of the abdomen are tense, inducing great impediment to breathing. Every now and then the horse bends, as if to lie down, but instinctively retains the erect posture.

The treatment on this day, the 14th, consists in the exhibition, in the shape of clysters, of about six ounces of the expressed oil of the poppy seed. The whole is rejected; the horse is back-raked but the rectum found empty; the bladder is also felt to be empty.

About 6 p.m. the respiration is more calm, the trembling has disappeared; the pulse is insensible; the ears are cold. The horse still will not lie down, and the symptoms all argue unfavorably. The horse drops suddenly about half-past eight o'clock, and in about ten minutes breathes his last.

Cadaveric inspection, eleven hours after death, discloses a double rent in the colon just above the sternum, with effusion of fæcal matter. The other appearances were insignificant, and require no mention here.—*Journ. de Méd. Vétér. de Lyon*, May, 1855.

This case, which I have just translated in its proper turn, could not come more aptly than it does to prove the worth of my father's reflections, to be found in the first pages of this number of the Journal. The horse just spoken of, with many others, died of ruptured colon; he clearly was not treated with sufficient foresight, and the only agent that could have been relied on at first, viz., aloes, was never thought of. In fact, much as there is to admire when entering the stately edifices of the Continent, consecrated to the teaching of our noble calling, there is, like everywhere else, some fault to find, and none struck me more, in the school of Lyons, than the difficulty they have in purging horses. I firmly believe this depends on the very inferior aloes they have, which leads them to place more reliance in saline or oleaginous than in aloetic purgatives. It must, however, be evident, that we cannot possibly venture to say that a dose of aloes in time would have cured the animal above mentioned, and

deaths from ruptured colon will occur in the hands of the most experienced and best informed practitioners, for the very reason that they may often be called in late, or frustrated in their attempts to do good.

There is a point of interest mentioned above, to which the attention of practitioners must be drawn; and, like an artist representing a battle-field, we drop on the episode that attracts attention, excites, and is not deficient in instruction. If, like in the artist's battle-field, there is confusion in the background, there are many stray incidents, as episodes, related in the history of the case of ruptured colon just recorded, that furnish much for reflection. We there find mention of "Sensibility and insensibility of the loins." Scarcely a dealer, and not few veterinarians in England must have noticed that when a Frenchman buys a horse, he lifts his rug forwards, and lightly pinches him over the spine. The dealer, in his ignorance, does it to ascertain if the horse can flex his loins, if it be ankylosed or not; but rigidity of this region may, and does occur, independently of any affection of the spine. I believe, with Rey, that oftentimes the degree of sensibility of the lumbar region is a better indication of a horse's actual state than the pulse or other signs at our command. If there be any constitutional derangement or functional disturbance of any special viscus, the horse tells it directly, according to the degree of that perverted state, by the greater or less rigidity of his loins, by the greater or less feeling evinced when this region is compressed. In many cases have I observed that as a horse got worse the back became more stiff; and on the contrary, this strikingly indicated any amelioration, even if other bad symptoms persisted, but which, however, yielded in their turn. One thermometer is more delicate than another, and so can we rely for the detection of shades of difference in the state of an animal more on one symptom than on another. I have no hesitation in asserting that often—not invariably—passing the hand along the back will tell us more than the breathing and pulse, more than auscultation or the ascertaining the temperature of various parts of the body.

If I have said that in Lyons they often cannot purge a horse, I can in return say, that the admirable system adopted for clinical instruction—the manner each student is made to observe and look for himself—the method he is made to adopt in preserving records of cases—far, very far, outbalance any little defects; and I hope that I may live to see such practices followed out—but followed out efficiently—here, with such efforts to ameliorate

the condition of the student, as in every way to offer him the scope he deserves, requires, and ought to claim for intellectual improvement. Well may the worthy President of the Royal College of Veterinary Surgeons strive to bring members of the so-called sister profession together, but we shall never possess just claims to sisterhood until liberally instructed and made to look on our Alma Mater as the centre of learning, and the focal point to which all rays of wisdom converge.

(*To be continued.*)

16, UPPER WOBURN PLACE.

Facts and Observations.

ESTIMATED VALUE OF SHEEP AND WOOL.

THE sheep of the British Isles are believed to number about 35,000,000; England alone possesses about 27,000,000; Scotland, according to the agricultural statistics of 1854, has 4,787,235, and Ireland, in 1853, had 3,142,656. Calculating the 35,000,000 as worth 30s. a head, the sheep stock of Britain is worth 52,500,000*l.* sterling. The well-being of these flocks is a point of national as well as of agricultural importance, for they not only materially enhance the fertility of the soil and afford a good return to the farmer, but also largely contribute to the feeding and clothing of our population. About 10,000,000 of sheep, weighing on an average 80 lbs. each, are annually slaughtered for food. This furnishes 800,000,000 lbs. of mutton, or on an average rather more than half a pound per day for each individual in the three kingdoms. The mutton at 6*d.* per pound is worth 20,000,000*l.* sterling. Professor Low estimates, that, allowing for the deficient weight of the wool of slaughtered sheep and lambs, each fleece averages 4½ lbs., and the total annual produce of wool will therefore be 157,500,000 lbs. Fixing the value at 1*s.* 3*d.* per lb., the total yearly value of the wool of Great Britain is nearly 10,000,000*l.* sterling. A hundred years ago the flocks of Great Britain were about half as numerous as they are now.—*Essay by Finlay Dun.*

CURE OF ITCH IN HALF-AN-HOUR BY SULPHUR IN A LIQUID FORM.

DR. E. SMITH has called the attention of the Fellows of the Medical Society of London to an article in

the *Gazette Hebdomadaire*, by Dr. Bourguignon, in which is a confirmation of the value of the treatment of itch, in Belgium, by sulphur, combined with lime in a liquid form. The remedy is prepared by boiling one part of quick lime, with two parts of sublimed sulphur, in ten parts of water, until the two former are perfectly united. During the boiling it must be constantly stirred with a piece of wood, and, when the sulphur and lime have combined, the fluid is to be decanted and kept in a well-stoppered bottle. A pint of the liquid is sufficient for the cure of several cases. It is sufficient to wash the body well with warm water, and then to rub the liquid into the skin for half an hour. As the fluid evaporates, a layer of sulphur is left upon the skin. During the half-hour the acarus is killed, and the patient is cured. It is only needful then to wash the body well, and to use clean clothes. In Belgium the treatment is introduced by first rubbing the body for half an hour with black soap, but this does not appear to be necessary. The only essential act is that of the careful application of the fluid sulphur. The lime is of no importance in the treatment, except to render the sulphur soluble, and such would probably be the case if potass or soda were employed. The chief point in the plan thus employed, which is an improvement upon the mode of application of sulphur in substance with lard, is the more ready absorption of the remedy, and consequently the more certain and quick destruction of the insect, by using sulphur in a fluid form. In so disgusting a disease, it must be of great moment to be able to cure it in half an hour.—*Medical Times*.

APPOINTMENT OF A COMMISSION OF INQUIRY RESPECTING EPIZOOTICS IN FRANCE.

THE Minister of Agriculture has reorganized the Commission on Pleuro-pneumonia, which will, however, for the future be styled the Epizootic Commission.

The following gentlemen are named as its members:

President, M. de Mornay, Principal of the Agricultural Department.

Yvart, Inspector-General of the Veterinary Schools and Imperial Cattle Establishments.

Boitel, Inspector-General of Agriculture.

Renault, Director of the Imperial Veterinary School at Alfort.

Delafond, Magne, and Bouley, Professors at the Alfort School.

Baudement, Professor of Natural History and Zoology as applied to Agriculture, at the Imperial Conservatory of Arts, &c.

One of the principal veterinary surgeons of the army to be nominated by his Excellency the Minister of War.

Secretary, M. Reynal, Head of the Clinique Department at the Veterinary School at Alfort.

The Directors of the Imperial Veterinary Schools of Lyons and Toulouse are likewise appointed members of the Commission, for the purpose of taking part in its labours on their visiting Paris.

REMEDY FOR HYDROPHOBIA.

DR. DE SANDORFFY, of the Odenburger Comitats, Hungary, employs, as a preventive against hydrophobia in case of the bite of a mad dog, the following measures:

The wound is brought into a state of suppuration by means of an ointment composed of Ung. Basilic., Pulv. Cantharid., and Pulv. Hydrarg. Oxyd. Rubr., and a powder is administered daily—consisting of

Pulv. Rad. Valerian, gr. x;
 „ Cantharidum,
 „ Meloës majalis, gr. $\frac{1}{4}$;
 „ Sacchari alb., gr. vj.

Dr. Sandorffy states that during forty-four years he has had 160 cases of bite by mad dogs or cats, and in no instance has this treatment failed in preventing hydrophobia. In 70 out of the 160 cases the madness of the animals was unquestionable.—*Wachtel's Zeitschrift für Natur., and Heilkunde in Ungarn*, 1854, No. 26.

To the Editors of the 'Veterinarian.'

MESSRS. EDITORS,—The best mode of treating canker, for the information of “An Old Pupil,” consists in the use of dry tow and pressure.

ANOTHER OLD PUPIL.

Extracts from British and Foreign Journals.

CASE OF TAPE-WORM OCCURRING IN CONNECTION WITH THE EATING OF RAW PORK.

By Dr. W. T. GAIRDNER.

AT a recent meeting of the Medico-Chirurgical Society of Edinburgh, Dr. Gairdner narrated the case of a girl then under his care in the infirmary, which seemed to support the views of Siebold and Kuchenmeister, as to the transformation of the *cysticercus cellulosæ*, found in the hog and other domestic animals, into the *tænia solium*. Nine yards of the tape-worm had been expelled under the action of the shield-fern oil. On inquiry, the girl admitted that she had been in the habit of eating quantities of raw pork and butcher-meat generally. This was from a peculiar liking or inclination of her own, and was not a habit contracted in consequence of the example of others. In other respects her diet had been similar to that generally in use in her station in life in Scotland. It was well ascertained, that in Scotland the occurrence of tape-worm was rare as compared with some parts of England, and very rare when compared with some other European countries. It was not less unusual in Scotland to indulge in the eating of raw flesh, which practice was believed to be a frequent source of the production of *tænia*. The occurrence of *tænia* was very common in Germany, where the practice of eating raw ham was also prevalent. On the other hand, Dr. Gairdner had reason to believe that *tænia* was rare in Holland, where the eating of raw animal food is very unusual. Dr. Gairdner alluded to a case lately published by Dr. Crichton (*Monthly Journal*, June, 1855,) in which he had been able to trace the occurrence of *tænia solium* to the practice of eating raw meat, a practice which was common among the Lancashire operatives. Dr. Gairdner was inclined to attribute the rarity of the occurrence of hydatids in Scotland to the small proportion of animal food, and especially of ill-cooked animal food, used by the labouring classes. During Dr. Gairdner's connection, as pathologist, with the Infirmary, he had opened not fewer than 1500 bodies, and he had never met with a single case of hydatids of the liver. Two cases had otherwise come under his notice; but in his dissections at the Infirmary, he had never seen one instance of the occurrence of the acephalocyst. In the London hospitals a considerable number were known to occur every year.

COVERED YARDS AND BOX FEEDING.

THE general introduction of under-cover feeding, which is gradually superseding the ordinary open farm-yards with untroughed buildings, renders it necessary to consider the matter with reference to the health of our animals. The heavy losses from disease prove that at present there are many points affecting the sanitary condition of our animals that require inquiry and amendment; I purpose stating my own experience and some other facts, in the hope that my brother-agriculturists will communicate their views and practice on this all important question. I say all important, because I believe that when we get statistics of the number of animals lost by disease on each farm, it will show a formidable sum total of deduction from the farmers' profits. For many years I have kept my bullocks, sheep, and pigs on open boarded floors, and with complete success, never having in any instance had a complaint amongst them, although sometimes from 300 to 400 pigs, 200 sheep, and 30 to 50 bullocks have been placed in close quarters.

Although I cut up a great quantity of straw for consumption by my animals, still, owing to the large bulk I now grow, I find I cannot get rid of it all in that way. I, therefore, converted my large barn into a covered yard, and have had therein at various times three lots of bullocks, none of which turned out satisfactorily, either as regarded the animals or the manure, although they were well littered down with clean straw every day. I suspected that the cause of this was the heating of the manure under them, which became so intensely hot, although moist, that on removing the upper layer volumes of steam would rise to the top of the barn. One week was sufficient to render it as hot as a cucumber bed, and in five or six weeks the dung became "fire fanged" and undecomposed. Knowing how many covered yards succeed, and having observed the dung from these removed in a rich, cool, "spitting" condition, and knowing, too, how discrepant have been the various results of box and under-cover feeding, I instituted inquiries into the cause, and received from one whom I consider the father of covered yards, a most lucid explanation. I had for many years seen in the covered homestalls of the Rev. Mr. Cooke, of Semer, near Hadleigh, many fine beasts in perfect health and condition on manure from two to four feet thick. To him, therefore, I applied for explanation and information. "Well," he said, "like yourself, in my early days I found my cattle unhealthy, and perceived that the cause was a too liberal supply of straw as litter; the air being thus admitted, set up violent fermentation and the heating process. I there-

fore allowed the 'pudding' or solid manure to accumulate, scattering by hand very thinly merely as much straw as would make a pasty mortar bed of thick doughy consistence, the result being the exclusion of air and perfect coolness. It would be better to run the risk of the animals being somewhat dirty than that there should be an active fermenting mass."

This explanation of Mr. Cooke's I consider so valuable that I think it an agricultural duty to make it known. By only applying as much straw as will tread into and amalgamate with the manure, it is preserved in that condition in which it may be ploughed in for roots, without the process of dung heaping. We all know practically that if pigs are permitted to lie on fermenting or hot manure, they will have the "heaves," a lung disease as fatal as the pleuropneumonia in cattle. The whole question of under-cover feeding thus resolves itself into one of so proportioning the straw to the manure that the mass shall be sufficiently pasty to remain cool. I have known pig-feeders (not farmers) who, having no straw, successfully fattened their hogs, although wallowing in and bedaubed with cool manure, whilst others who permitted too free a use of straw got heat and disease.

The natural tendency of a farm-yard labourer is to litter abundantly, nor can we wonder at it, when we know the thorough washing which farm-yards receive by heavy rains and water from untroughed buildings. There is no fear of too much heating here. Still, in a warm dry spring I have known cattle attacked with "lung disease" by lying on dense masses of manure in open yards, the internal heat of which was fatal to their health. We must never forget that the liquid manure is thirteen times more in weight than the solid. If so, how great must be its loss in sloping open yards.

Thinking this matter a very important one, I have sent a copy of this letter to several agricultural periodicals.—*J. J. Mechi, Tiptree Hall, Kelvedon, Essex, Jan. 31.*

P. S.—Mr. Lawrence, of Cirencester, keeps his farm horses in boxes, removing the manure once in six or eight weeks. He cuts his straw into 4-inch lengths. In our eastern counties straw is generally more glassy and reedy than in moister districts. Mr. Randall, in the vale of Evesham, manages his sheep in winter under cover by placing them upon burned clay, or brick-dust, in fact. He has been for many years a great clay-burner, and wheels daily (I believe) one barrowful, morning and evening, to every six large sheep. The result is perfect health and appetite, and a most valuable compost, producing great crops of roots. I can, from my own experience, strongly recommend burned clay for this purpose. I find a chalk floor has a greater tendency to heat than a bricked floor.

THE VETERINARIAN, APRIL 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

NECESSITY OF PURE FOOD FOR CATTLE.

THERE are few subjects of more practical importance to the agriculturist than the supplying of his cattle and sheep with pure and wholesome provender; for there are none which more immediately affect their health, as well as the well-doing of the animals which he intends as food for the people. Besides this, there are few things, standing in the relative position of cause and effect, which have a greater claim on the attention of the veterinary surgeon. Too often can he trace disease and death to improper, and often poisonous food; an instance of which is recorded in the present number of our *Journal*. But the question has a far wider bearing than this, seriously affecting as it does the community at large. Statistics of agriculture will, in our opinion, possess only half their real value, if they do not embrace returns of the number of animals annually lost by disease, and the probable causes on which these depend. Hereafter we may find it necessary to expatiate on this part of the subject more fully; but for the present we must narrow our views, and speak of the direct consequences of improper food being given to cattle. In the present improved system of husbandry, a necessity is created for large quantities of stock to be kept on a farm, and which calls for the raising of heavy root-crops from the land; thus the keeping of stock and the good cultivation of the farm act and re-act on each other, flourishing or declining as collateral circumstances operate beneficially or otherwise on these primary essentials. How important, then, is it that these root-crops should be in a healthy state; and how much of this may depend on the kind of manure which has been employed as a dressing for the land, we at the pre-

sent time are to a great extent ignorant of. Chemistry, botany, physiology, and practice, must all unite to accomplish a satisfactory solution of this question. We regret to say that experience has confirmed our long-existing suspicions that there are artificial manures which produce a state of plethora, not to say disease, in plants, which render them unfit for the food of animals, when they are too freely partaken of. A very few weeks since, we were consulted by one of our most celebrated breeders of sheep, in consequence of the losses he had sustained from a cause of this kind. As soon as the animals were put on a particular field of turnips, several died somewhat suddenly. An early removal at once stayed the fatality; but this returned when the sheep again went on to these turnips. This was repeated again and again, and always with the same result; no losses occurring in the intervals, although the sheep were fed on other turnips, grown on the same kind of soil, but without the same artificial manure. We could multiply these cases to a considerable extent; but we desire rather to direct attention to the injury done to cattle by the adulteration of oil-cake and other feeding-stuffs. Of late years this subject has occupied the attention of most farmers and veterinary surgeons; and it was hoped that the interest taken in it by the Royal Agricultural Society had put an effectual stop to the practice. It was only last week, however, that a specimen of foreign rape-cake was sent to us, which was largely adulterated with mustard; indeed, it is a rare thing to obtain a *pure rape-cake*, and as such, veterinary surgeons should put their employers on their guard against its use. The leading symptoms of poisoning by mustard are a quick and weak pulse, repeated moaning, profuse perspiration, distension of the stomach and bowels with gaseous matter, great abdominal pain, and copious evacuations of liquid fæces mixed with blood. These are succeeded by stupor and intermitting convulsions; death usually taking place in twelve to twenty-four hours from the time of eating the cake. The post-mortem examinations show intense and diffuse inflammation of the mucous membranes, more particularly of the stomach and bowels.

A new field of investigation is thus opened up for the profession, namely, that of analysing this description of food; and amply will it repay its cultivation. Chemistry and the microscope are the chief, if not the only, implements, so to speak, which will be required. On the authority of Herapath, we have it stated, that the microscope surpasses any other method of arriving at a satisfactory conclusion. Speaking of the plan to be adopted, he says, "it consists in treating the cake, previously broken up into small pieces, with repeated portions of boiling water, and squeezing the insoluble remainder in a linen cloth, so as to obtain the husk of the seed in a separate state, and then to act upon the latter with hot dilute nitric acid, and examine its structure under a microscope. By means of the nitric acid, the starch, grains, &c., are dissolved, and the husks themselves are rendered so transparent, as to readily admit of their structure, and the form of their constituent cells, being observed. The form of these cells in the husks of the various oleaginous seeds is so essentially different, that a simple examination by this process will immediately convince us, that a better means of detecting the adulteration of oil-cakes could not be devised. Thus, for example, the cells in the mustard-husk are very small, whilst those of the rape and linseed-husk are considerably larger, and differ from them in shape. The mustard-husk has, moreover, a hexagonal network of thicker tissue, which is very characteristic, and is not observed in either of the others."*

With regard to the feeding properties of rape-cake, practical experience has shown that it is inferior to good linseed-cake, although in a chemical point of view it ought to be quite as nutritious. This probably depends on its hot and pungent taste, and also on the disagreeable odour it possesses, its oil having a great tendency to become rancid, and thus causing cattle to refuse to eat a sufficient quantity of it. Its nutritive properties no doubt are also impaired from its containing the seeds of many plants, which spring up with the rape. Throughout Belgium and France, where rape is

* See February number of the 'Veterinarian,' p. 96.

grown in great quantities, its clean cultivation is much neglected; and it is not an unusual circumstance to see almost as much mustard as rape in the same plot of ground.

The poisonous properties of mustard are due to an essential oil, which may be obtained by digestion of the cake in either cold or tepid water; but if *boiling* water be employed for the purpose, the oil is said not to be evolved. It is therefore of importance that all *rape-cake* should be exposed to a temperature of 212° before it is given to cattle either alone or mixed with other food.

Many other equally injurious agents are employed for the adulteration of oil-cake; and in the discussion on this subject by the members of the Royal Agricultural Society, it was remarked by Mr. Fisher Hobbs, "that it had recently come to his knowledge that eight or ten bullocks were poisoned by eating cake adulterated with refuse bitter-almond cake, and which was consequently impregnated to a certain amount with the prussic acid that substance is known to yield. Bitter almonds are poisonous, as Dr. Fresenius, of Wiesbaden, has remarked, because on mastication there is formed in them an ethereal oil containing two substances separable from each other, namely, prussic acid and pure bitter-almond oil, both of which are poisonous. Bitter almonds and black mustard seed are also very similar to each other in their chemical relation; each contained the same kind of acid and the same vegetable principle. Bitter almonds yield about 28 per cent. of fixed oil, and 72 per cent. of cake. In reference to the comparative value of cake of the same substance, the Baron Weckherlin had stated that the hydraulic press furnished worse cake than the old ordinary presses, in consequence of its greater pressure leaving no oil, but only bitter matter behind in the cake; and Professor Pabst, of Hohenheim, in reference to inferior or poisonous oil-cake, had observed that the beech-nut cake had been found poisonous to horses, and whether poisonous or not to cattle, it would be injudicious to use it."

Besides the employment of substances which are positively injurious, other materials are sometimes used which deterio-

rate the feeding value of oil-cake, and thus increase the profits of the crusher by his charging for it as much as for the genuine article. The commercial value of the oil, however, of oleaginous seeds, prevents to a great extent this system of adulteration, as many of the things said to be mixed with the seed before crushing would, if so used, tend to retain a relatively larger quantity of oil in the cake; but as we cannot now enter into a consideration of this part of the subject, we shall conclude this article by referring to a legitimate substitute for oil-cake which has recently attracted the notice of agriculturists, namely, cotton-cake.

This material is obtained from the seeds of the cotton-plant, and it appears, from our present experience of its feeding properties, to offer some advantages over things more generally employed. Professor Way, at a late meeting of the Council of the Royal Agricultural Society, drew attention to the subject, by remarking "that a new cake was likely soon to be brought into the market, namely, the cotton-cake, obtained from cotton-seeds, after the oil, for the candle-manufacturer's purposes, had been pressed out of them by machinery. The husks, however, and the short fibres of cotton which remain attached to them, might prove indigestible and obstructive to the functions of the intestines when given as food to animals; but the manufacturer was about to employ a process for decorticating the seeds, which would remove such objection to its use. The cake would be of superior quality, and moderate price, namely, 8*l.* 10*s.* per ton. The manufacturer also thought it might be advisable to make an intermediate cake, of cotton-seed, with linseed, which would induce the cattle to eat the cotton-cake more readily."

To Mr. Gadesden, a member of the Council, we are indebted for the details of some experiments in the feeding properties of cotton-cake. As these are the first yet made public, we prefer to give them in full.

He reports that "with a view of testing the comparative quality of this cake for feeding purposes, he selected, two months since, a dozen Southdown sheep, dividing them into two pens of six each, in an open shed on boards, supplying

them daily with equal quantities of Swedes and chaff, giving to one six, a pound each per day of linseed-cake, and to the other six, a like quantity of cotton-seed cake. The sheep were weighed when put up, and again at the end of four weeks, with the following result :

	Cwt. qr. lb.				Cwt. qr. lb.		
Six fed with linseed-cake,				Six fed with cotton-seed			
weighed Dec. 26, fasting	5	3	18	cake, weighed same time	6	0	9
Ditto, weighed Jan. 24	. 6	1	25	Ditto, weighed Jan. 24	. 6	1	15
	<hr/>				<hr/>		
Increase. . . .	0	2	7	Increase. . . .	0	1	6
	<hr/>				<hr/>		
	£ s. d.				£ s. d.		
4 weeks' consumption of				4 weeks' consumption of			
cake, 1cwt. 2qrs. 6lb., at				cake, 1cwt. 2qrs. 6lb., at			
14l. 10s. per ton, cost	. 1	2	6	8l. 10s. per ton, cost	. 0	13	3

Although the cost of the cotton-seed cake gave a saving of 9s. 3d. as compared with that of the linseed-cake, the sheep fed on it increased less than the others by 29 lb. live weight, equal to 16 lb. dead weight, which, at 6½d. per lb., would be 8s. 8d., being very nearly equivalent to the 9s. 3d. saved in the price of the cake. The weighing at the end of the second month gives," he says, "results so nearly corresponding with the foregoing that I need not trouble you with the particulars."

From these details it would seem that, at 8l. 10s. per ton, cotton-seed cake is but little cheaper than the best linseed-cake at 14l. 10s., but at the same time we may rejoice at the introduction of another variety of cake, likely to be supplied in almost unlimited quantity, useful in itself, and the competition of which with linseed-cake is calculated to render the cost of the latter more moderate to feeders of stock, and to prevent the injurious adulterations to which we have referred.

Veterinary Jurisprudence.

BARNSELY COUNTY COURT.

Before W. WALKER, Esq., Judge.

CHAPPELL v. HAIGH.—Mr. Micklethwaite (barrister), of Wakefield, appeared for the plaintiff; and Mr. Westmoreland of Wakefield, for the defendant.—Plaintiff is a rag-merchant, at Osset, near Wakefield; defendant is a farmer, at Denby-Dale. The action was brought to recover 20*l.*, as damages for breach of a warranty of a horse sold by defendant to plaintiff at Barnsley fair, on the 11th of October last, for 32*l.*, which horse was then warranted sound and a good worker by a memorandum in writing. It appeared that about a month after the sale of the animal, symptoms of lameness began to manifest themselves, and on being examined by a professional man the horse was pronounced to be unsound from ossification of the cartilages of the foot; upon which notice was given to the defendant, and the animal was sold in Wakefield market for 16*l.*, whereby plaintiff lost 16*l.*, to which he added 4*l.* for expenses incurred, making 20*l.*, the amount claimed. Veterinary surgeons were called on both sides: Mr. Charles Naylor and Mr. Cuthbert (Leeds) gave their opinion as to the unsoundness of the horse; and Mr. Morville (Wakefield) and Mr. Cawthron (Barnsley), for defendant as to its soundness. Anatomical specimens of a horse's foot were produced by Mr. Cuthbert, showing the difference between a diseased foot and one quite sound. His Honour, after patiently hearing all the witnesses, and a somewhat lengthy address by Mr. Micklethwaite in reply, gave judgment for the *Defendant*, chiefly on the ground of plaintiff keeping the horse a month before complaining of its unsoundness.—Allowed for defendant's advocate, 15*s.*; witnesses, 4*l.*

Mr. Micklethwaite intimated his intention to apply for a new trial.

USK COUNTY COURT.

Before his Honour J. M. HERBERT, Esq.

SHEEP DIPPING CASE.

PARRY v. EDWARDS.—This was an action brought by Mr. William Parry, of the Buildings farm, Llandegveth against Mr. John Edwards, chemist and druggist, Usk, to

recover compensation for the loss of thirty-nine lambs, which he had sustained through using a dressing for the tick, supplied by the defendant without proper directions.

The jury empannelled to try the case consisted of John Pritchard, Landenny; Henry Crump, Glascoed; John Rowland, Llangwm; John Davies, Llanbaddock; and Benjamin Scriven, Usk.

Mr. Edmund B. Edwards, of Pontypool, attended for the plaintiff, and Mr. Blunt, of Usk, appeared for the defendant. Mr. Edwards opened the case, and called

James Dew, who said,—I am in the employ of Mr. Parry, of the Buildings farm. In July last I went to Mr. Edwards's shop; Mr. Edwards was from home. I asked the assistant if they kept anything in the shop for "dipping," to keep the the fly off. He said yes. I said I want enough to dress forty-six lambs, for Mr. Parry, of the Buildings, and the directions, if you please. I told him I would wait for it, as we wanted to dress the sheep that evening. He said, what stuff are you to take? I said, my master did not care what stuff; but Mr. Edwards was to send it and the directions. He brought the stuff out and put it on the counter, and said, there is enough for forty. I said, I want enough for forty-six. He said, well there is enough for forty-six. I then asked for the directions. He said, when you get home, put half a pint of boiling water upon it and stir it, and it will come a nice liquid. I said, what do you say? and he repeated it again. I said, how am I to put it on? He said, take a dish, and throw it away when you have done, and just part the wool, and rub the mixture along the back, and that is all. I asked the question a third time, and he said, rub it along the back, and think of the half-pint of water. I took it home, and my master put the half-pint of boiling water on it, and took a stick, and stirred it. It did not bring the stuff to any sort of liquid, so I put nearly another half-pint; it was then thick like an ointment. We dressed all the sheep, and did not use half the mixture; the jar now produced was three parts full. Next morning eleven lambs were found dead; and, by my master's orders, I went to Mr. Edwards. He was from home, but I afterwards met him in the street. I said, half the lambs are dead that I dressed with the stuff out of your shop yesterday. He asked me if there was anything the matter with the sheep. I said no, they were quite healthy; and it was only the stuff your man sent out, and there are more dying. He said, what sort of thing was it. I said, a deep blue ointment. Mr. Edwards then said, if he intended it to be rubbed on, he must have put too much mercury in it; if it was for dipping

it should be yellow. I told Mr. Edwards the instructions his man had given, to part the wool and rub it along the back. When in the shop, he gave me some black soap to take home, and Mrs. Edwards said, "I heard you ask for the dipping stuff, and for the directions, and how wrong it was he did not give it." Mr. Edwards said, "if I had been there it should not have gone out without directions." He said perhaps he might not see his man that evening, "but when he comes home, we will put it all straight, and will come over in the morning." I took the soap home, and used it according to his directions, and he told me to give the lambs some milk and the white of an egg. Everything was done according to his directions; and, on the following morning, Mr. Edwards's assistant came over. I said, a nice job has happened. He said, how came you to make such a mistake as this? I said, I made no mistake, but told my master the words you told to me, to pour half a pint of boiling water, and take a stick and stir it, and it would make a nice liquid. He said, "and so it would, but it was for the 'slush' I meant." My master said to him, "why did you tell my man to rub it along the back, if it was meant for dipping?" He said, "it might have been used that way, by afterwards throwing along the back a pint of water. My master said, 'why did you not tell my man that, and then this job would not have happened?'" He said he thought I knew by my asking, and said to my master, "if you did not know how to use it, you should have got some one that did." My master said he should look to Mr. Edwards for the value of the lambs that were dead. There were three lambs that the stuff was not applied to, they are well now; thirty are now dead.

Cross-examined by Mr. Blount—It was on a Saturday morning, about eleven, that my master gave me the order to go to Mr. Edwards and see if he kept stuff for dipping lambs; and if he did, to get enough to dress forty-six lambs, and to bring directions. I walked to Usk; it is about an hour's walk. Mr. Williams, of the Mardy, was in the shop at the time. The assistant asked me what stuff I wanted; he did not ask me if I would have "Biggs' Mixture." I said the stuff Mr. Edwards would send. He put a paper about the jar, and I saw him write "poison" on the paper. He told me to take a stick and stir it in a gallipot, and it would come to a nice liquid, fit for use. He did not tell me to burn the stick, he told me to destroy the plate I took with me, and nothing more; he did not tell me to tie the sheep's legs, and mind to keep their heads above water. I did not ask him to give me the directions in writing; I remembered the directions he gave me perfectly well. I did not rub hard, nor

break the skin; the skin was broken afterwards by the ointment. The skin began to crack some time afterwards.

William Parry, of the Buildings farm, Llandegveth, examined—The last witness is my servant. I sent him to Usk, in July last, to Mr. Edwards's for some "dipping," and told him to ask for directions. On his bringing it home, I uncovered the pot, and asked for the directions. The man said he had not been given any except what he was told,—“to put half a pint of boiling water upon it and stir it up, and it will come to a nice liquid; then just part the wool, and rub it down the back.” We parted the wool from the neck to the tail, and laid the ointment gently on with a stick, from the head to the tail. The next morning twelve of the lambs died; the remainder of the lambs I took to the house. I had the cows milked, and gave the milk to the lambs. When Mr. Edwards's assistant came, he said it was the man's mistake, and the conversation passed as before stated by the man. I said, if you had meant it for "dipping," why did you tell my man to rub it along the back? He said, well it may be used in that way, by taking water afterwards, and throwing it along the back. I said, why did you not tell the man that, and then this would not have happened. He said he thought the man knew, by his asking; and dipping was so common, that if I did not know how to do it, I should have got some one who did. He brought some stuff with him to be put into boiling milk, and some chalk, in case they should scour. I afterwards saw the assistant in the shop, and we talked about the sheep and Bigg's wash. I said, I did not believe that wash was ever sent out without directions. Mr. Edwards came in, and said he was sorry for what had happened; and he had rather lose a hundred pounds than it had happened; the stuff was right enough if properly used; and all I blame Davies for, in sending it without directions; and if he had been there, it would not have been done. Thirty lambs are dead, and more than nine others are in a bad state—worse than dead. I do not value them at anything; the lambs were worth 1*l.* each. The lambs were perfectly healthy before using the stuff, and three that I did not apply the ointment to are now perfectly well.

Thomas Morgan, butcher, Pontypool, was called to set a value on the lambs. He considered the fifteen he saw dead on the floor to have been worth 1*l.* each, and those now alive are of very trifling value.

Richard Steel, surgeon, of Blaenavon.—I analysed the pot of ointment, there are 40 grains of arsenic to every ounce; the pot was half full when it came into my hands. It is a

very severe and dangerous ointment applied in the way stated by the witnesses. It would require $5\frac{1}{2}$ gallons of water to the ointment that now remains in the pot to make it fit for use. Arsenic remains in the system a considerable number of days. I do not think a pint of water thrown over the back of the sheep, after the ointment had been used, would have prevented fatal results, but have rather aggravated the effects. Arsenic produces sores on the skin of either animals or human beings outwardly applied. Biggs's Dipping contains about the same quantity of arsenic as this would, if properly mixed. I should think very specific directions should be given with such ointment.

Mr. Bowles, veterinary surgeon, of Abergavenny, stated—If the mixture produced contains the quantity of arsenic stated by Mr. Steel, it would produce death applied in the manner it has been. Half a pound of arsenic should be diluted with twelve gallons of water, or a scruple to an ounce.

Mr. Steel.—The ointment produced contains about $1\frac{1}{2}$ oz. to the pound.

Mr. Bowles.—Six ounces of arsenic is more than necessary for dressing forty-six lambs.

Mr. Blount ably cross-examined the witnesses, but elicited nothing material except what has been stated. He then proceeded to address the jury, and reminded them that Mr. Dew had come into the shop to ask for "dipping mixture," and was it possible to suppose Mr. Davies could have thought a person would come to ask for such a thing and afterwards apply it in the way he did? It would be for the jury to decide which was to be believed, Mr. Dew or Mr. Davies. He then called

Thomas Picton Davies, who deposed—I am assistant to Mr. Edwards, was apprenticed to Mr. Morgan, of Landilo Vawr, have lived with a druggist at Islington, and afterwards with a physician and apothecary in London. Had frequently to give out horse and cattle medicines. My father is agent to Sir James Hamlyn Williams, Bart., Caermarthenshire. Have had frequent opportunities of seeing sheep dipped in Biggs's wash. When Dew came to the shop, he said Mr. Parry had lost his bill, and brought 22s. towards it, and wanted enough stuff to dip forty-six lambs. I asked him whether he would have Biggs's composition, or the mixture we make up ourselves; he said he was to have what we made up ourselves. Mr. Williams, of the Mardy, was in the shop at the time. While I was writing "poison" on the mixture, he asked me how he was to use it. I told him to mix half a pint or a pint of boiling water with it—enough to make it run,—and pour

it into the dip, to stir it with a stick, and afterwards destroy the stick and pot, in case a dog or child may get at it, and something serious may happen; to be careful when he dipped them to tie their legs, and keep their heads above water. He said, Yes, yes, and seemed in a great hurry. He never asked for further directions. Never told him to put on a plate or dish, nor to rub it on the sheep's back. When I went to Mr. Parry's, I told Mr. Parry I was very sorry Dew had made such a mistake in bringing the message. I turned to the man and asked him why he put it on with a stick? He said, "You told me to stir it up with a stick." I asked him in Mr. Parry's presence if he remembered my telling him to burn the stick; he said he did. Mr. Parry afterwards, at Mr. Edwards's, said he did not know the difference between dipping and rubbing on the mixture, and his man knew no more about it.

Cross-examined.—Have seen a great many sheep dipped. They dip lambs and shorn sheep. It is not customary to send out directions with dipping mixture. I have seen eight or ten pots of Biggs's ointment opened, and two or three of them were without directions. I have not general instructions from Mr. Edwards to send written directions out with such things. Mrs. Edwards did not say "it would not have happened if Mr. Edwards had been at home." Did not tell Dew to use a plate or dish. Did not tell what quantity of water should be mixed with the ointment. Did not say anything about the "slush." In the court is the first time I have heard the term. Mr. Parry did not say to me, "If you had given written directions this would not have happened."

John Edwards examined.—Have been in the habit of selling Biggs's composition and my own; am not in the habit of sending written directions with the dipping. Have never seen it applied in any other way than by dipping. Remember saying to Mr. Parry, "It is surprising to me, that after sending for a dipping preparation, you should go and put it on with a stick;" and told him I thought it would be an insult to a man of his judgment to send written directions. Believe my composition to be much weaker than Biggs's.

Cross-examined.—If a farm-servant came for ointment I should think it necessary to give written directions unless he was going to use it himself. Have seen Biggs's pots opened without directions. Have seen perhaps twenty opened in my time, and two or three without directions. Have known farm servants very frequently make mistakes.

Henry Williams, farmer, was called.—He was in the shop

when the man came. He paid a bill, and asked for a dip, but did not hear him ask for directions. He left when Mr. Davis went to put up the mixture.

The advocate for the plaintiff addressed the jury, and told them it would be for them to decide whether they would believe Mr. Dew, corroborated by Mr. Parry, a man of the highest respectability, or Mr. Davies' testimony. Mr. Dew had been spoken of as a respectable man, and had undergone a searching cross-examination from the learned advocate for the defendant, without shaking his testimony.

His Honour summed up and touched upon the different points of the conflicting statements, and told them they must decide between the evidence given by Dew, corroborated in a degree by Mr. Parry, and that given by Mr. Davies; and although the law did not require written directions, it was for them to consider whether proper verbal instructions had been given.

The jury retired to consult, and on their return delivered a verdict for the *Defendant*.

The trial lasted seven hours.

MISCELLANEA.

EFFECTS OF OPIUM.

It would appear that opium, besides its narcotic influence, possesses the property of sustaining muscular strength, thus enabling those who *moderately* use it, to undergo such continued exertion and fatigue as would cause others to sink. Thus the letter-carriers of India, and those who bear messages, when provided with a small piece of this drug, a bag of rice, and a vessel to draw water, will perform incredible journeys. The Rajpoots, and other Indian tribes, present opium at their feasts and visits, with the same familiarity that Europeans do their snuff-box. The Tartar couriers, who travel night and day, also make use of it. Travellers in the Ottoman dominions generally take opium in the form of lozenges. Even the horses in the East seem to be sustained by its influence. The Cutchee horseman shares his opium with his flagging steed, by which he becomes invigorated, though apparently wearied out before. It is, therefore, the *abuse* not the *use* of a thing that renders it deleterious.

Very variable are the effects of opium on different indi-

viduals; this being most observable in the different races of men. For instance, in the East its exciting influence is more marked than among Europeans. "The Javanese," says Lord Macartney, "under an extraordinary dose of opium, become frantic as well as desperate. They acquire an artificial courage; and when suffering from misfortune and disappointment, they not only stab the objects of their hate, but sally forth to attack, in like manner, every person they meet, till self-preservation renders it necessary to destroy them. They shout, as they run, *amok, amok*; which means, 'kill, kill;' and hence the phrase, 'running a-muck.'"

Captain Beeckman was told of a Javanese who ran a-muck in the streets of Batavia, and had killed several people, when he was met by a soldier, who ran him through with his pike. But such was the desperation of the infuriated man, that he pressed himself forward on the pike, until he got near enough to stab his adversary with a dagger, when both expired together.—*Johnston's Chemistry of Common Life.*

ARMY APPOINTMENTS.

Probationary Veterinary Surgeons to be Veterinary Surgeons:

JOHN HENRY CARTER, M.R.C.V.S.

EDWARD KELLY, M.R.C.V.S.

JOHN BOLTON HALL, M.R.C.V.S.

"STAFF."

To have the local rank of Veterinary Surgeons attached to the Infantry Divisions in the Crimea:

JOHN COOPER, Gent.

EDWARD JOHN BROCK, M.R.C.V.S., Gent.

TURKISH CONTINGENT.

To have the local rank of Veterinary Surgeon.

ROBERT M'INTOSH, Gent.

OBITUARY.

BRADSHAW, H. A., Bridgenorth.

SCOTT, GAVIN, Turkish Contingent.

We have also to record the death of ALFRED HENRY CHERRY, of the 17th Dragoon Guards, which took place at Scutari from an attack of dysentery.

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Communications and Cases.

URETHRAL CALCULUS IN THE HORSE.

By E. BAILEY, M.R.C.V.S., Leicester.

ON the 12th February last a half-bred boat-horse was brought to me for examination, evincing the following symptoms. For some time past he had been gradually losing flesh, was occasionally in great pain, with constant dripping of the urine, and often making ineffectual efforts to stale.

On examination, there was found to exist a calculus in the urethra, at the part where it curves round the symphysis pubis.

A laxative was given, the diet restricted to bran mash, and on the following day lithotomy was performed.

The animal being properly secured, chloroform was administered, and the patient was fully under its influence in four minutes. An incision being now made through the perineum down upon the calculus (where it could be distinctly felt,) into the urethra, a large quantity of urine immediately escaped, which prevented me for a few seconds proceeding with the operation. A pair of spoon-bladed forceps were then introduced, and the calculus extracted; a small portion of it only being broken off, which was subsequently syringed out with tepid water. A catheter was now introduced, but no further obstruction could be felt. The incision was closed by three sutures.

The horse was nearly half an hour under the influence of the chloroform; at the end of which time he rose, and staled freely, partly by the natural passage, and partly through the wound. On the third day after the operation, the urine passed altogether through the penis.

In two days, suppuration was established, and the wound went on to my entire satisfaction, which became perfectly healed in a fortnight, at which time the animal commenced his usual work, and has continued to do so up to the present time, gaining flesh very fast.

The calculus is of the shape of a mulberry, and about the size of a large walnut.

ON CASTRATION IN INDIA.

By JAS. WESTERN, M.R.C.V.S., Horse Artillery, Bangalore.

MY DEAR SIRs,—I am much pleased to find that Captain Hickey has become a contributor to the *Veterinarian*, and still more to see the gentle castigation which he has quietly administered to our Indian Vets., which I sincerely hope will prove beneficial to them.

Captain Hickey thinks the reason why they do not write more frequently is, that they are afflicted with “downright laziness.” I fear there is some truth in this, for their practice is extensive, if not varied, and much of their time their own. But the true reason, I believe, is to be found deeper than in idleness. In the first place, on this side of India, there is no station in which there are two Veterinary Surgeons. The solitary mortal has, therefore, no one to whom he can communicate his doubts in dangerous cases, or his exultation in successful ones; and should he be one of the worst practitioners that ever left the College, it is of no consequence, for no one knows it; while, on the contrary, should he be one of the best, the circumstances are the same, for in like manner no one knows it nor profits by it.

Since the departure of the 12th Lancers for the Crimea, here have I been one of these solitaries, there not being a creature to whom I can open my lips on professional matters near me. Is it then, I ask, wonderful that a careless and indifferent habit grows upon one? It is not only ordinary man that is gregarious, but professional ones are so too. Here there are some ten surgeons and assistant-surgeons, having a superintending surgeon at their head, who visits at their hospitals, examines into their journals, and consults with them on their cases. Under such surveillance, the history of cases must be kept, and the cases themselves studied, for the practitioner is aware of the possibility of a cross-examination regarding them by his senior, who possesses the autho-

rity to communicate direct with the heads of the profession, constituting the medical board. By such means a knowledge of anatomy and physiology must be kept up, and medical phraseology continually practised, all of which, in the veterinary surgeon, more or less fall into desuetude as the result of his isolation; and so it will continue until we have a common head.

I have before written in your pages to the effect that we have no "senior veterinary surgeon" in India; no one to superintend our practice; no one who has the smallest control over us as far as our profession is concerned. If, therefore, the veterinary surgeon do but attend *at* his hospital with punctuality, his commanding officer considers him a most exemplary man; and if he do but keep the *number* of books laid down in the regulations, the inspecting general is naturally of the same opinion. Where then is the stimulus to exertion? Where is the *necessity* for it? He draws his pay to the same amount whether he is an industrious slave or an idle dolt, and thus it will continue until the eyes of our honorable masters are opened to their own advantage.

But this is not the subject on which I sat down to write to you about. I meant to give you a case of castration terminating in death, which Captain Hickey has been fortunate enough never to have had, except in a solitary instance. My old friend, Hurford, of the 12th Lancers, when here, was one day in conversation with the commander-in-chief, General Anson, who told him that at the Opoor depôt, although they castrated about a thousand horses annually, they never lost one. To which statement Mr. Hurford immediately replied that he did not believe it; and I confess I am of his opinion. Possibly no death actually took place while the animals were under the knife, but that deaths did occur, and that, too, as the results of the operation—although they were ignorant of it, for there was then no professional man in the establishment—I cannot but believe; and, perhaps, had my case occurred there, it would not have been considered as death from castration.

Since Mr. Hurford left India they have been particularly unfortunate at the depôt. Last year some sixty or seventy horses died of scirrhus cord and internal abscesses. They were consequently obliged for a time to discontinue operating, and the result is that many of this year's remounts are entire; about fifty of which have fallen into my hands. I may as well add that these losses at Opoor took place under the same management and man as were formerly so successful. Fortunately, indeed, was my friend, Mr. Thacker, that he was not appointed to this establishment until just after these disasters,

or the veterinarian's unfortunate commencement would have stood in strong and striking contrast with the successful practice of his unprofessional predecessor.

CASE.—1st Light Cavalry, E Troop, No. 1564. A chestnut, five-year-old horse, was admitted into the infirmary to be castrated. He was operated on on the 29th of January. Nothing unusual occurred, and all progressed favorably till late in the evening of February 5th. At four in the afternoon I had received a written report from the Farrier Major to the effect that all was going on well. I visited about six, when it was reported that the chestnut horse was not quite so well, but that he had eaten his small feed at midday. (I had myself seen the whole of the patients at seven in the morning, when there certainly was no sign of approaching illness.) I now found I had a serious case to deal with, and at once my prognosis was death. This event occurred at half an hour past midnight, or seven hours or so after the first symptoms of the attack. The post-mortem examination showed numerous ulcerations of the small intestines, from one of which faecal matter had exuded into the abdominal cavity. The liver was an old leathery whity-brown one; a most useless piece of lumber, about half the usual size, and incapable of performing any function. Was this a case of death from castration? Undoubtedly it was, for the horse would in all probability have lived on had he not undergone the operation until some other powerful stimulus had roused the latent fire. Now, should such a case as this I have recorded occur to Captain Hickey, I hope he will not lose the opportunity of examining well the state of the parts operated on. The enormous extent of disease which existed makes it appear to me extraordinary that death is not a much more frequent result than it is. At any rate I feel quite sure that Captain Hickey's humanity would be awakened in favour of his patient, and more than ten days given before being put to duty. In this instance death occurred on the ninth day, and it is something fearful to contemplate a patient performing duty with an abscess of the cord as large as one's double fist.

SEVERAL FATAL CASES OF DISEASE.

By Mr. TOMBS, M.R.C.V.S., Stratford-on-Avon.

GENTLEMEN,—The accompanying cases I have sent for publication in the *Veterinarian*, being at all times desirous to

advance the science of veterinary pathology. All of them having been hopeless from the time I first saw them, I have not thought it worth while to fill up the pages of your Journal with the treatment I had recourse to in each particular case.

I am, gentlemen,

Yours respectfully.

CASE I. ACUTE INFLAMMATION OF THE STOMACHS AND INTESTINES IN A COW.—June 4th, 1855.—The subject, a 7 years old milking cow, was apparently well at the milking time in the morning, at 5 o'clock. At 6 a.m., when going from the yard into the pasture field, she laid down and purged violently. I first saw her at 5 p.m. She was then lying down in a state of stupor, quite exhausted; no pulse could be felt, and she was evidently fast sinking.

I ascertained that she had been in this state since noon, and had voided large quantities of liquid fæcal matter, mixed with coagulated blood. She died at 6 p.m.

Sectio cadaveris.—Rumen distended with gas and partially digested food. The lining membrane of this, as well as the other stomachs was highly inflamed. The whole of the intestines were thoroughly black, and almost putrefied. They contained liquid fæcal matter of a very offensive character, mingled with blood. The minute blood-vessels of the villous coats were in a state of congestion. The liver was enlarged, scirrhus, and hepatized, the small lobe excepted. The gall-bladder was full of bile. The cause of disease was uncertain. The animal was supposed to have picked up some deleterious herb in the field.

CASE II. ABSCESS CONTIGUOUS TO THE UMBILICUS IN A FOAL.—The subject was a half-bred foal, three weeks old. On June 7th, 1855, he was visited by me, according to request. He is dull, breathing and pulse quickened, sucks but little, and a discharge of matter takes place from the umbilicus.

I treated the case as the symptoms required, and the animal continued much the same until June 10th, when the most fearful symptoms came on. He rolled about terrifically, the pulse and breathing were exceedingly quick, and he died in the evening.

Post-mortem appearances.—A large abscess was found, situated between the urachus and the peritoneum, near the umbilicus. Serous effusion had taken place between the lower and posterior part of the abdominal muscles, which were very much thickened. Two cysts were attached to the bowels,

adjacent to the umbilicus. The foal had been unwell from its birth.

CASE III. "WOOD EVIL."—June 21st, 1855.—A cart foal, three weeks old, was observed to be lame yesterday. To-day there is a slight swelling on the inside of the near stifle joint.

23d.—The off hock and near stifle joint are much swollen; the pulse is quick, the breathing laboured, he looks thin, and sucks but little. The case was treated throughout as circumstances demanded.

24th.—The swelling has extended from the stifle to the anus; the hock is more enlarged, the animal cannot walk, or get up when down, he will not suck at all, and the pulse and respiration are very quick.

25th.—The pulse and respiration continue accelerated; both the thighs are swollen from the hocks to the anus and hips; the colt protrudes his nose, and saliva flows from the mouth; a discharge of mucus mixed with blood takes place from both nostrils; he cannot swallow; and the throat is swollen externally.

26th.—The animal died.

Post-mortem appearances.—The cellular membrane covering the hocks, the ligaments and bones of the hocks, black and gangrenous; the cellular membrane and muscles of the thighs mortified; a quantity of sero-purulent matter between the gracilis and vastus internus muscles, and between the latter muscle and tibia, to which bone it was closely adherent; a large quantity of thickened synovia, mixed with pus, in the stifle joints; the ligaments and bones of these joints in a state approaching putrefaction; air-passages inflamed, and contained frothy extravasated blood; lungs congested.

P.S.—The most remarkable feature in this case was the affection of the air-passages and lungs. These diseases of the joints and synovial membranes, and which sometimes involve the muscles, of sucking colts, are termed by country people, "Wood Evil."

CASE IV. HIGHLY DISEASED LIVER AND SPLEEN.—July 4th, 1855.—Attended a cart-mare, 7 years old, having laryngitis and an abscess under the jaw. The abscess broke in a few days, and the mare went on afterwards apparently favorably (although she had been broken-winded for two years,) till the middle of August, when she was put to work for a day or two, which quite exhausted her. I was then requested to see her again, when I found a hard pulse beating 70 in the minute; the breathing quick, and peculiarly short; she

walked stiff, and grunted when turned round; the tunica conjunctiva was tinged yellow; she lies down occasionally, is in pain, and looks back to her flanks. I at once gave the case up as being incurable, and death put an end to her sufferings on the 22d.

Post-mortem appearances.—Lungs very light and pale; emphysema of the small lobes; air had escaped out of the small cells between the covering membrane of the lungs; effusion of serum into the abdomen; lymph adherent to the intestines in several places; left kidney enlarged and inflamed; spleen considerably enlarged, much diseased and indurated, and when cut into, it had a mottled appearance; there existed large patches of cheese-like matter embedded in the substance of the spleen, which organ was also inflamed in places, and weighed 24 lb. avoirdupois. The liver had not a healthy or sound part in it; it was also very much enlarged, thickened, indurated, reddened, and full of abscesses containing viscid matter, varying from the size of a pea to a walnut; and it weighed 85 lb. It is surprising how the animal could have existed so long with such an amount of disorganization of these parts.

CASE V. POISONING BY WHEAT.—Nov. 20, at 8 p.m., I was called to Broad Maistor to see two cart-horses that had eaten a quantity of wheat the night before. They had been worked as usual the greater part of the day. One of them, a grey horse, when I saw him had no perceptible pulse, the belly was tympanitic; he laid down, rolled, then got up and tried to vomit, when he reared up, fell, and died in a few minutes after I saw him.

The other horse, a brown gelding, was standing immovable and perspiring profusely; his breathing was very quick and oppressive; the visible mucous membranes were congested; the pulse weak, and 120 in a minute, and he, too, soon died.

Post-mortem examination made the next day on the grey horse.—Stomach crammed full of wheat, not in the least digested, and the intestines contained much of the same grain, particularly the duodenum. The mucous coat of the bowels was highly inflamed, and the villous coat of the stomach was in an extreme state of congestion, it presenting all the appearance of acute poisoning. The bowels were distended with gas; the muscular coat of the colon was ruptured in two places, and the left obliquus internus abdominis muscle was rent to the extent of six inches, from the great pressure of the bowels.

ENLARGED AND SCIRRHOUS SPLEEN, ACCOMPANIED WITH FARCY.

By W. T. STANLEY, M.R.C.V.S., Leamington.

THE patient was a chestnut-coloured gelding, a first-class hunter, 7 years old, and had been under treatment for several weeks before I saw him; but in spite of all that had been done, he daily became worse.

On examining his pulse, I found it ranged from 60 to 70, but not wiry; the breathing was quick and interrupted, accompanied with a painful grunt; the appetite impaired, legs warm, yet the animal was daily becoming weaker, and losing flesh. There were also slight indications of inflammation of the superficial absorbents.

From these symptoms, coupled with the fact of the horse being a tall and rather narrow-chested animal, and likewise from the character of the cough, I was of opinion that his lungs were tuberculated, and consequently the prognosis was an unfavorable one. I tried setons, with counter-irritation and stimulating medicines, but with no material benefit, only that for a time this treatment appeared to check the disposition to run on to farcy; but after having been under this treatment for six weeks, the disease broke out in a virulent form, attended with enlargement of the submaxillary glands on the near side. Tonic agents were now prescribed, and continued for a month, without any corresponding advantage. The horse during all that time never losing his appetite entirely, but invariably consuming about half the quantity of food requisite for him when in health. When I visited him, I generally found him extended at full length in his box, lying on his right, or off side. He was never observed to lie down on the near, or left side. After being under treatment for about ten weeks, he was suddenly taken much worse, the pulse rose to 100, the breathing became more laboured, and in a few days he died.

On the *post-mortem examination* being made, from his long illness, I expected to find the lungs and pleuræ very much diseased, but on opening the chest, the lungs were found to be perfectly healthy, and the pleuræ likewise, not the slightest amount of disease being perceptible in them. On a further examination, after removing the intestines, which were also healthy, I found the disease to be located entirely in the spleen, which was enormously enlarged, and in a scirrhus state, having its peritoneal capsule firmly attached to its substance, and the organ, when abstracted, weighed thirty-

six pounds; the liver was somewhat enlarged, but healthy in its structure; the heart was slightly hypertrophied, but its inner membrane, in both ventricles, with the valves, was extensively inflamed, and in a gangrenous state, accompanied with flakes of effused lymph. The kidneys and all the other organs were healthy.

Remarks.—This case I consider interesting, since it shows how necessary it is at times, in lingering and insidious cases, to institute a post-mortem examination; as I believe it is generally considered that when farcy terminates fatally, it is consequent upon disease of the lungs, which organs in this case were perfectly healthy. The immediate cause of death was carditis, the disease of the spleen being the proximate one, which organ had no doubt been affected for a considerable time. The lying down at length on the right side, appeared the only symptom indicating disease of the spleen. Farcy, I believe, is rarely attributed to diseases of any organ except the lungs. This case, however, is one in which it is not referable to any of the organs of the chest or abdomen, such as the liver and kidneys; and although the function of the spleen has been somewhat questioned, and the organ itself considered by some physiologists as of little use in the animal economy, yet, in my opinion, it does act as an auxiliary to the other organs referred to, so as to render the blood healthy; and when once this becomes diseased or vitiated, farcy, and even glanders, may, and often do, follow.

CASE OF CHOKING IN THE HORSE.

By R. H. HOLLOWAY, M.R.C.V.S., 2d Madras L. Cavalry.

GENTLEMEN,—My only apology for introducing to your notice so comparatively unimportant a case as the following must be the courteous admonition which dropped from your pen in the last October number of the *Veterinarian*, p. 170.

Yours very faithfully.

To the Editors of the Veterinarian.

A troop horse belonging to my own regiment, who at all times when medicine had to be administered to him was refractory, was reported to me, on the 2d of May last, as being nearly choked. One glance was sufficient to betray the imminent peril and the exquisite suffering of the unfortunate animal. But as the symptoms attendant on a case

of choking are sufficiently familiar to your readers, it would perhaps only needlessly lengthen the detail were I to recapitulate them.

After making every manual effort to overcome the obstruction without any effect, the horse was drenched with warm water, and the pharynx and œsophagus thoroughly manipulated, and yet with no better result; indeed, the greater portion of the liquid given was almost forthwith ejected through the mouth and nose.

I endeavoured to pass a probang, but it provoked so much resistance, and aggravated so materially the existing distress, that I was constrained for fear of suffocation to desist.

It soon became apparent, however, that a crisis was at hand; in fact the horse was in such an alarming state that I was apprehensive he might fall headlong every minute; without hesitation, therefore, I opened the trachea, and introduced a canula, which afforded immediate and permanent relief.

From the moment of the operation, the breathing became more and more tranquil, and every untoward symptom gradually subsided. Perfect quietude was enjoined, the tube removed and washed, and the wound cleaned once daily; the bowels were kept gently open, a sloppy diet adhered to, and in the course of three or four days (the experiment only then being made,) the horse breathed freely and comfortably without the artificial opening, when the use of the canula was discontinued, and the wound, which was merely sponged and touched as occasion demanded with Sol. Cupri Sulph., very rapidly granulated and cicatrized.

The horse was discharged for duty on the 24th of the same month, from which time to the present he has continued to perform his work as well as ever.

A case of choking in cavalry practice is, I believe, a rare one. The above is the first that I have met with, and that was more attributable to the restiveness of the horse than to any other circumstance. The ball was a small tonic one.

I cannot but think that the fresh compounding of medicines has much to do with this comparative exemption, and as far as I am concerned, I do not allow a ball to be given enveloped in any material whatsoever.

A SANGUINEOUS OVARIAN TUMOUR.

By W. BARROW, M.R.C.V.S., Newmarket.

THE ovarian tumour forwarded by us was removed from a hack mare, aged 17 years, belonging to a clergyman who resides between three and four miles from Newmarket, to which place he was in the habit of riding her, up to the day of her being brought to our infirmary.

On March 11th she was admitted. External appearances. Animal emaciated; ribs arched; abdomen distended; pulse 96, soft and feeble; respiration frequent and laborious, with general tremor of the muscles of the body; the conjunctival and buccal membranes blanched. *Prognosis*, internal hemorrhage.

12th.—Pulse in number as before, character thready; respiration more tranquil, which, however, soon became accelerated and laborious when the animal was wisped over, producing great tremor of the muscles of the flank; membranes still blanched; frequent sighing; loss of appetite; she does not lie down; surface of body warm; fæces scanty.

13th, a.m.—The pulse has risen to 120, and is more thready; respiration tranquil when the animal is undisturbed; sighings more frequent; membranes unchanged; surface of the body still warm, but no sweating; she has not yet lain down, and occupies one position in her box; still no appetite; elevation of the head does not occasion staggering or any faltering of the limbs, but it increases the respiration and sighings. 6.30 p.m. Pulse indistinct at submaxillary artery; respirations irregular; visible mucous membranes remain the same, and the elevation of the head now occasions immediate staggering; no sweating. 8.30 p.m. The animal staggered, fell, and expired without a struggle.

Post-mortem appearances. On opening the abdomen a large quantity of blood escaped, and it continued to flow to the amount of two large stable pailfuls. The stomach and bowels were healthy. The spleen much enlarged and consolidated. The liver greatly reduced in size, and of a light colour. Kidneys healthy. Heart and lungs also healthy. The ovarian tumour was found occupying its natural position, except being placed more forward. Its weight, with the other portions attached, when it was first removed from the abdomen, was 19½ lbs. It is, perhaps, necessary to mention that on the 28th of November last, the mare was sent to our infirmary suffering from obstinate constipation of the bowels, accom-

panied with slight uneasiness. No fæces passed from her until the third day after admission, when the bowels were relieved and acted copiously; but singular to remark, at this time her pulse was 84 and soft, and the membranes pallid; and this state, both of pulse and membranes, continued present at the time she was discharged, on the 7th of January, apparently convalescent. A remark was made to the owner respecting the pulse, when he replied he would watch her narrowly, and he has since told me that he did not find her to fail in her appetite or spirits till the day previous to his riding her down for the last time.

SUPPURATIVE LARYNGITIS WITH METASTATIC ABSCESES IN THE HORSE.

By JOHN B. HENDERSON, M.R.C.V.S., London.

WITH OBSERVATIONS,

By JOHN GAMGEE, M.R.C.V.S., Lecturer on Veterinary Science, London.

A BAY gelding, rising six years old, the property of Mr. C—, a large horse-dealer; had been bought at York fair (which took place a short time before Christmas last). He was brought up to London for sale, and from his arrival in town to the 22d of January, the day I was requested to look at him, he had never appeared well; being extremely dull, and for the last fortnight had a discharge from the nostrils. A mild dose of physic had been exhibited about a week before, the action of which continued for three days, and weakened the horse excessively. I found him in this feeble condition, with cold extremities, foul mouth, the epithelium desquamating in patches off the mucous membrane, which is pallid, and dirty looking; the pulse weak, and 40 in the minute; the respiration rather laboured, but not much accelerated, and the bowels gently open.

I had bandages put on the legs, and gave him a draught composed of:

℞ Spt. Æther. Nitrici, ℥iss;
Pulv. Gentianæ,
Ferri Sulphat., āā ʒij.

A mustard poultice was applied to the throat, chest, and brisket, and the like dose of medicine was repeated in the evening.

Jan. 22d.—The horse has been lying down in the night; has eaten a great portion of his food, and his bowels are regular. The other symptoms are exactly as reported yesterday. The medicine was again exhibited in the morning, but as the fæces appeared hard towards the afternoon, probably from the action of the sulphate of iron, I gave some linseed oil. Later, he was drenched with gruel, a bottle of stout being mixed with it.

24th.—On going to the horse this morning, he appeared at first sight to be decidedly better. He was standing in a firmer position with his head out of the door. He had evidently laid down during the night; had also eaten the greater part of his food, and passed some fæces. The pulse, however, was as weak and as indistinct as ever, and the membranes still possessed a peculiarly unhealthy appearance. I gave the same medicine once more. Towards evening, the respiration had increased, and the pulse rose, when I administered a drachm of powdered opium in some linseed oil.

25th.—He is decidedly worse this morning; pulse 85, and bounding; membranes as before; respiration greatly increased; countenance anxious; has eaten nothing in the night, and can scarcely support himself. I repeated the counter-irritants to the throat, chest, and brisket, and gave:

℞ Nitric. Ether., ʒij;
Ext. Belladonnæ, ʒj;
Aq. q. s., ft. haustus.

I repeated the belladonna at three o'clock. At seven o'clock, I found my patient lying down, but frequently making ineffectual efforts to rise. I now felt certain, that it would prove a fatal case, nevertheless I administered another dose of the extract of belladonna, and repeated the counter-irritants.

The history of the case, from this time to the period of the death of the animal, would only be tedious to narrate; suffice it to say, that he evinced considerable pain, often making several ineffectual efforts to rise and change his position, and died about three o'clock, a.m., on the 26th.

Autopsy.—On cutting open the skin along the course of the linea alba, there was observed a slight serous effusion. The intestines and stomach were healthy, though rather pale in colour, and an abscess of considerable size existed on the spleen, a minute description of which shall be given hereafter. The lungs were much diseased, particularly the left one, and both were studded with abscesses; the mucous lining membrane of the air passages was inflamed throughout, and covered with a purulent secretion.

I had the spleen and the larynx sent home, and having apprised my friend Mr. John Gamgee, that I possessed some interesting morbid specimens, he kindly assisted me in making a minute examination of them.

We found that the spleen presented, on its anterior surface, towards the left side, the apex being free, a large tumour about ten inches long, and six inches broad. The whole weighed 15lb. 3oz., being nearly five times its natural weight. The normal parts of it bore externally a perfectly healthy aspect, and were of a darkish violet colour. The tumour was fluctuating in parts, at others simply elastic. It was dense at its summit, but at the sides, fluctuation indicated the existence of pus; which pus seemed to be immediately under the thickened tunica albuginea. On manipulating the places where the covering was thinnest, the coats readily gave way, and thick creamy pus escaped.

The peritoneal coat presented a considerable development of organized false membranes over an extent of surface six inches in diameter, and from this circumscribed peritoneal surface of the tumour, the substance of the spleen was swollen out, insensibly diminishing all round to its normal thickness.

I would here observe, that the anterior marked outline of the tumour was the posterior edge of the "hilum" of the spleen, so that the anterior division of the inferior surface of the spleen seemed entirely free from disease.

I made a plaster cast of this morbid specimen, and by the kind assistance of Mr. H. B. Tuson, who has painted it very faithfully, after a water colour by Mr. Gamgee, I am happy to say an exceedingly correct representation of the original has been obtained. The cast my worthy friend Mr. Gabriel has kindly undertaken to preserve for me in the Museum of the Royal College of Veterinary Surgeons, Red Lion Square. The cast completed, we cut through the enlarged parts of the viscus, and found that the spongy structure was plugged up and filled with thick cheese-like pus.

On examining the larynx, we found that the crico-arytenoidei-postici muscles were perfectly healthy, as well as the arytenoid muscles; if there were any difference in bulk, the right posticus muscle was more developed than the left. On opening out the left wing of the thyroid cartilage, the crico-arytenoideus lateralis and the thyro-arytenoideus were seen to have a pale par-boiled appearance, and we had to remove a limpid jelly-like substance, contained in areolar tissue, before we could bring them well into view.

We now exposed the lining membrane of the larynx, by

cutting straight through the posterior part of the cricoid cartilage. It had a general inflammatory appearance, deadened here and there with adherent thick mucus and pus. The cordæ vocales were puffy and red, and from the opening of the laryngeal ventricles on either side flowed a tenacious greenish-looking pus, which, on being cleared away, showed that the lining membrane of the ventricle was not ulcerated, but possessed a deep inflammatory redness, from which we might clearly infer that these lesions were those of simple suppurative laryngitis. The schneiderian membrane had no traces of ulcerative disease on it.

Remarks.—The owner of the horse discovered him to be a roarer, very shortly after he had him in his possession, and I consider that it is a very interesting question, in a legal point of view, whether the horse was a roarer from disease which existed at the time of sale; and above all, whether the abscess in the spleen existed at the time of sale. We all know that large accumulations of pus frequently take place in an incredibly short time; but I think all who saw this abscess would have come to the conclusion that it was of long standing, on account of the organized state of the false membranes and thickened walls of the sac.

With regard also to the disease of roaring, from the appearance of the lateralis muscles, I believe that it was chronic.

MY DEAR HENDERSON,—I have with pleasure perused the history of the case of internal deposits of pus in the horse, to which you directed my attention after the animal's death.

Nothing can be added to what you have said of the larynx; but with reference to the spleen, it must be remarked, that the tumour which we examined together seemed to have originated in an interstitial suppuration, checked in its destructive career by the deposit of organizable lymph, limiting the pus within circumscribed cavities; these were numerous, varying in size from a pin's head to a hen's egg, and all clustered together to form one continuous mass of abscesses. The tissue of the spleen, towards the apex, was likewise infiltrated with pus; it was red, but without signs of active inflammation.

It was unfortunate that I did not see the lungs, but, so far as the evidence afforded by the spleen would justify an inference, the abscesses were not truly metastatic or indicative of purulent infection. All true pyæmic abscesses that I have examined, whether in veritable cases of pyæmia, or after experiment, have had the distinctive characters of containing

pus highly charged with remnants of the destroyed tissue, with sloughy unhealthy-looking parietes, never bounded by a true wall, or sound plastic lymph in process of organization. In the lungs the true metastatic collections of pus are often fetid, of a dark green or brown coffee colour. Such abscesses are readily obtained in the viscera, suppurations also occurring in the joints, when pus is injected into the aorta of a horse, dog, or other animal; and may be seen after injecting the jugulars too, if repeated introductions of pus into the venous system, at short intervals, are effected.

If all instances of multiple abscesses within the body, with the exception of true glanders, are to be classed under the same head, it appears undoubted by this case, by no means a solitary one, that a distinction must be drawn between *traumatic* and *idiopathic pyæmia*. My brother, in 1853, defended the opinion of the occurrence of abscesses, in various parts of the body, not traceable in their origin to pus carried through the blood from a suppurating wound, or formed in an inflamed vein.

The *idiopathic pyæmia* of my brother is clearly the *pyogenic fever* of Dr. Jenner. The Gulstnian Lectures, that were delivered by the latter gentleman, and published in the *Medical Times and Gazette* for 1853, contain a very interesting account of this *acute purulent diathesis* or *pyogenic fever*; and as I think that to it may be referred Mr. Vincent's case of abscess in the cerebrum,* your case of metastatic abscesses, and many of those instances of internal suppurations in strangles, I shall transcribe some most important sentences from Dr. Jenner's lecture.

"Immediately after the termination of the acute specific diseases," the Doctor tells us, "it is by no means uncommon for one or two small abscesses to form in the subcutaneous cellular tissue."

"These disseminated abscesses in the subcutaneous tissue, after or during the progress of the acute specific diseases, are allowed pretty generally to have their origin in a diseased condition of the blood; only by some they are held to be critical, the evacuates of peccant matter; while by others they are regarded merely as local inflammations, excited by a diseased condition of the blood."

"The idea that these subcutaneous collections of purulent-looking fluid of small size, and the formation of which is attended with little constitutional disturbance, are due to any foreign solid matter, be it pus-globules or any other, circulating in the blood, has never, so far as I know, been advanced; it would be too untenable to be entertained for an

* See 'Veterinarian,' January, 1855.

instant. But instead of being attended by little constitutional disturbance, as in the cases to which I have just referred, we now and then find that great constitutional derangement precedes and accompanies the establishment of the suppurative action,—that instead of being situated in the cellular tissue under the skin, the collections of purulent-looking fluid are formed in cellular tissue more deeply seated. Again, in other cases, we find that they are not limited to the cellular tissue, but that the pus-blastema is exuded into the joints; and yet further, that it is, in rare cases, disseminated in masses through the viscera of the chest and abdomen. Now the transition from the first to the last-described state is by most insensible gradations; the circumstances under which all occur are the same; and if it be granted that the first arises from a definitely diseased state of the blood or system generally, I see not on what ground it can be argued, that the others, which differ only in the more wide diffusion of the local affections, may not also depend on the same diseased state of the blood. This disease seems very closely allied to that condition of the blood in which purulent discharges issue at the same time from several of the mucous membranes after some of the acute specific fevers, and to that chronic state in which every scratch or abrasion “fester,” as the vulgar say. The existence of this condition of the blood, or system generally, as a substantive disease, appears to have been in modern times first recognised by Tessier, in 1838. He, however, associated with it the cases in which disseminated abscesses are excited by the circulation of foreign matter in the blood. Tessier described the state referred to as a new pathological genus, under the name of the “purulent diathesis;” and he defined it to be a modification of the organism characterised by a tendency to suppuration in the solids and coagulable fluids.”

“Amid much pathologically erroneous, the doctrine of Tessier appears to contain an important truth, viz., that in a certain number of cases of disseminated abscesses, the febrile disturbance is established before any local disease is set up, and, consequently, before any pus is formed, and by inference, that the abscesses are, in such cases, merely the effects of a special alteration of the element from which that blastema is exuded out of which they are developed.”

“Although the morbid condition of the blood, which is thus manifested by its effects, is common as a consequence of the acute specific diseases, it sometimes arises without having been preceded by any other disease, *i. e.*, as a primary substantive affection.”

Dr. Jenner has personally informed me that his views, propounded in 1853, have only become consolidated with time and experience; and as it is clear that Dr. Jenner's *pyogenic fever*, and the *idiopathic pyæmia* spoken of by my brother, are one and the same disease, so there can be little doubt as to the accuracy of my brother's notion, that "the presumptive evidence is in favour of the belief that cases of pyæmia occur without any solution of continuity, or other diseased condition of the veins."

After having thus exposed the opinions of medical men, it is extremely interesting to read Hering's work on the 'Diseases of the Domestic Animals,' the last edition of which is of 1849. There is a variety of hectic which this learned veterinarian calls "*symptomatic hectic fever*," this being synonymous with "eiterungsfieber." The literal translation of the latter expression being "*suppurating fever*," or the pyogenic of Dr. Jenner.

This very frequently occurring form, Hering tells us, originates either as the sequela of a drain on the system by a disproportionate abundance of the secretions interfering with nutrition, like as in bad diarrhœa, and even when excessive quantities of milk, or of semen, or of urine are formed, or through chronic and copious suppurations from the surface of wounds, &c. Albeit, in most cachexiæ, a hectic fever occurs towards their close, especially in cases of tuberculosis or acute suppuration of the lungs, or of the liver, or mesenteric glands. It appears that the blood wastes itself in the formation of pus, and sometimes the pus enters the circulation to work its deleterious effects. This form of wearing-down fever is distinguished by Hering from the distinct infection of pus which indubitably occurs on the entrance of pus in the blood. It is not then of to-day that the doctrine of a purulent diathesis has gained credence with veterinarians.

Dr. Jenner tells us that "the acute specific disease, with which especially the acute purulent diathesis, or pyogenic fever, may be confounded, is, especially, typhus fever. From this it is distinguished by the activity of the febrile symptoms at the outset, the early delirium, the absence of eruption, and the rapid formation of the numerous centres of suppurative action."

"Pathologically, the affinity of this disease seems to be with erysipelas."

After all this, I may laconically state that I consider the case you this day record as one of "*idiopathic pyæmia*," or "*pyogenic fever*," which Dr. Jenner, Hering, my

brother, and others, look on "as a primary substantive affection."

I am, &c.,

JOHN GAMGEE.

16, UPPER WOBURN PLACE;
April, 1856.

DISEASES AMONG HORSES AND CATTLE IN THE CRIMEA.

By F. DE FAIR ELKES, M.R.C.V.S., Dépôt, Baljik,
Black Sea.

MY DEAR PROFESSORS.—The performance of severe duty alone must plead my excuse for not, ere this, penning you a few lines. I was, directly I arrived in Buyukdere, (the then head cavalry quarters), appointed to the medical charge of a dépôt just formed here, and since my arrival, I have been scarcely able to find a leisure moment. There were 490 horses here when I came, forty-six of which were at once put by me into a "temporary hospital." Since then, the number has been increased to nearly 1100, and I have now 157 cases under treatment, the majority of which have "sore backs;" and such backs as drew from the commanding officer here the declaration, that, in his opinion, "most of them would never bear saddle again." They were really in a deplorable condition. Neglect during transit, and the continuance of the exciting cause, producing terrible ravages in both bone and ligament; and thus entailing much trouble during treatment. In many cases, the removal of the tips of the dorsal spines was necessary, as also the detaching of portions of the ligaments of the muscles attached to the spinous and transverse processes of the dorsal vertebræ, as anteriorly the trapezius, and posteriorly, the latissimus et longissimus dorsi; also the spinalis dorsi muscles. The cause of these sore backs is the surcingle being very tight. This first irritates, and then inflames the part, when a tumour forms; and, as a matter of course, suppuration follows. During all these stages the pressure is constant, many of the poor animals having to carry a man; while the half trot-like canter they compel them to proceed at, must necessarily increase the torture of the animal. The continuance of this for many days will enable you to imagine their state when we receive them. Hot fomentations used primarily, followed by cold lotions, with mild escharotics and disinfectants, such as Sol. Cupri Sulph. dil., vel Arg. Nit. dil., with the addition

of poultices in some cases, usually complete the cure, although the cures are often very tedious ones.

Then, again, the cases of lameness from kicks, bites, etc., are very numerous. The horses being merely picquetted, (no bales existing at present), they are continually injuring themselves. I have also many cases of *Œdema*, and seven cases of *Farcy*. I have likewise had more cases of *Enteritis* than I like, eleven in all, and three fatal ones. One horse belonging to the last detachment, I had destroyed for "*Acute Glanders*." The animal was much debilitated, and had been left on the hills for two nights, being unable to travel. I examined it cursorily in the evening when it was brought in, and ordered a diffusible stimulant and a warm mash; but in the morning, on again more carefully examining it, the symptoms were much increased in urgency, and I ordered it to be destroyed immediately; and as the last detachment of which it formed a unit were all much debilitated, in fact, emaciated, I suggested that they should be paraded every morning, lest others should be affected, and thus infect the whole depôt. For my assistants, I have one serjeant and one farrier, who superintend the Turkish grooms. I did come out here with the mistaken idea that these Turks were fond of horses and good grooms; but I was deceived, for they are the most lazy, idle, lying, deceitful fellows I ever saw; and force, with constant supervision, is necessary to get even moderate attention paid. The horses arrive here in a woful state as regards shoes; and sometimes almost hoofless, from travelling without those necessary articles. I am in favour of the Turkish shoes for horses here, with some slight alteration. This, however, is a subject which, just now, I will leave untouched, or I may bring down on my poor self various antagonistic assertions which at present I have not time to reply to; (by the word "*present*," I mean while here doing such heavy duty).

As if to overwhelm me with practice, I have been obliged to inspect the cattle here belonging to the Commissariat; for there is great mortality amongst them, and "*My dear Doctor*" is constantly wanted for an opinion, and often have I had to make post-mortems in the open air, the bleak winds almost piercing me through. I have had very many reports to make, for dysentery and pneumonia are rife.

Among the porcine tribe I have an almost unlimited field for practice, there being now 5000 head here. Constant shipments are being made of them to Balaclava for the troops, and herds are continually arriving. My directions are chiefly for the prevention of disease, for I am almost minus medi-

cines, having only my own private chest for all my wants; while I am also nearly without instruments, for my case I unfortunately lost when riding one day; and the honesty we *read* of as pursued by the Turks has not been exemplified by its being returned to me. “*Vis medicatrix naturæ*” is therefore a powerful ally of mine; and I get on pretty well, a friend of mine here, Dr. Hyde, being my resource when I am “hard up” for medicines. On Sunday morning last, while eating my usual frugal breakfast, consisting of black bread, tea, et “*rayon de miel*,” a note came from the commissariat, stating that fourteen of his cattle were dying *per diem*, and asking me to meet him, to inspect, advise, and find out the cause, and, of course, to supply the remedies. Being then very busy, having to inspect a newly arrived detachment of horses, I appointed midday to meet him, and somewhat hurrying over my inspection, I galloped to the cattle shed, and found him looking at a fine ox lying down. “There, doctor, this is the way they go off,” said he. “They lie down so for days, and then die.” He then asked me to examine it. I questioned the herdsman, who said there was no diarrhœa (there had been cases of diarrhœa and enteritis, as per report previously). I examined it, and at once gave an opinion that it was pneumonia; when, as if to belie me, the animal voided a quantity of thin bloody fæces. Still I was confident that pneumonia was present; but the human doctor who was present, said, “Oh, no; it is dysentery.” “Yes,” I replied, “dysentery and pneumonia.” Seeing they were still unbelieving, I said, “Let the animal be opened.” This being agreed to, we had the animal’s throat cut; and I anxiously waited for the appearance of the lungs. The small intestines were throughout their whole course inflamed, and the lungs highly diseased, being partially hepatized, and in places tuberculated; so that I think this is a malignant form of disease. Suppuration had not commenced, nor was there either effusions or adhesions in the thorax, I therefore incline to the belief that it is an epizootic. It may be an enzootic; but I cannot assign a cause for the latter, whereas for the former I can give abundant causes. Firstly, diarrhœa is very prevalent. On my way here from Varna, a merchant, who contracts for government supplies, asked me to look at and prescribe for some cattle of his thus affected. I rode ten miles to see them, and ordered Mag. Sulp. in Aq. Menth. Pip.; and most of them, he has since informed me, are now quite well. Then, again, these animals come from various parts of the country, have long marches, are irregularly fed and watered, exposed to cold, enduring fatigue, and then all

at once they are well fed and housed. From these facts we may gather pretty fairly the causes of the mortality; at least, I think so. I recommended Creta Ppt. et Pu. Opii, for the dysentery; but neither was at hand. The chalk, however, has been procured to-day, but no opium. This has been again sent for, and a temporary hospital made, to which all the sickly animals are to be removed, thus isolating them. The doors of the sheds are all opened in the day, and the end doors at night; thus getting a current of air through. The utmost cleanliness is ordered to be preserved, and the dung removed and burnt, as it is impossible to remove it very far off. With these directions finish the only assistance I can give.

December 12, 1855.

I again have a leisure moment, and gladly embrace it to finish this rambling epistle. The weather, with the exception of one day (18th instant), has been fearfully violent: winds, snow-storms, and a degree of cold not to be described. On the 18th, I superintended the embarkation of 180 horses, going to Scutari for an artillery corps. They were on board H.M. Transport 214, 'Resolute' steamship, and I got a kick from one of the horses, which would in England have had the effect of making me an invalid, but here I am obliged to think it quite a minor matter.

I have just returned from camp, having been to see a patient dangerously ill with enteritis, and also from making a post-mortem examination of a mare that was reported to me as having suddenly dropped down dead. The exciting cause of which, I believe, was her being galloped to water, drinking greedily, and perhaps galloped back, for the large intestines were intensely inflamed, and also the stomach. On looking at the lungs, I found them both hepatized, and the vessels engorged, presenting a beautiful appearance. The former disease was evidently chronic, but doubtless this state of the lungs hastened death, the immediate cause being gastritis. The animal was in good condition. I regret to state that the epizootic still rages fearfully amongst the cattle, twenty-five and thirty are dying daily. I am so busy, and the weather is so bad, that I cannot as yet make any more post-mortem examinations of them, but will as soon as possible; and will report to you as soon as I do so, if there is anything worth the communicating. I am much afraid of the disease raging amongst my horses. Western writes me, saying glanders is rife in Balaclava, &c. I am keeping a strict look out for it here, having had one case; but as yet I see no symptoms of it, and fervently hope I shall not, or the loss would be

frightful. You must please excuse this scribbling, for the cold is so intense that I can scarce write at all. Fur coats and caps, leggings, fires, are all of no use, for you still feel frozen. The ink I am writing with is warmed from time to time, or I could not get it to flow.

I subjoin a few cases of some little interest :

1. SESAMOIDITIS.—December 13th, 1855, my attention was directed to a case of lameness in the off fore-leg of a horse. The animal was walked and trotted, and I came to the conclusion that the foot was diseased. The farrier removed the shoe; but after a careful examination, I could discover nothing to account for the lameness, the foot being to all appearance perfectly sound: still I thought the foot must be the seat of disease.

My hospital sergeant-major and farrier both thought it a clear case of shoulder lameness, for no other reason that I could deduce, than that, as the foot was apparently sound, the shoulder of necessity was the seat of the lameness (in justice to them, I may say, I had under treatment a case of scapulo-humeral disease at the time). To satisfy both myself and them, I examined the leg carefully from the cartilage of the scapula downwards to the coronet, but not a sign of organic lesion or derangement could I detect. In this state of doubt, I ordered the animal into the hospital with the intention of waiting for the development of the cause. Treatment at this period would have been mere empiricism. Luckily, in two days after, during which period I had re-examined the patient with no better satisfaction, I received the November and December numbers of the *Veterinarian*, in the first of which, I read Mr. Turner's able continuation of a disease he calls "Sesamoiditis," a long word, but to me an expressive one. My mind conceived that the *pierre d'achoppement* was at length removed, that I had a case of sesamoiditis, and I almost cried "Eureka," and only awaited the morning's dawn to convince myself of the fact. Being fully impressed with this newborn idea, I had the lame horse out, and the fetlock-joint received from me a minute manipulatory examination, but both my eye and sense of touch failed to detect the slightest derangement of structure. There was no unusual heat to be felt; I ran my finger laterally, using some little pressure, still discovered nothing. Unsatisfied and disappointed, I placed my hand posteriorly, and passed it down the leg, pressing upon the perforatus just where it glides upon the sesamoids, when the animal flinched. Withdrawing the foot, which was slightly flexed, fearful of a mistake, I

repeated this several times, and always with the same result. I at once ordered a blister to the part. Am I not justified in considering this a case analogous to Mr. Turner's sesamoiditis?

2. ACTIVE CONGESTION OF THE VESSELS OF THE MUCOUS MEMBRANE OF THE STOMACH.—December 20th, 1855.—I was informed that a horse had dropped down dead in one of the stables, I went immediately, and found life to be extinct.

Post-mortem.—I found the muscular and peritoneal tunics of the stomach much congested. This horse was plethoric; fed on barley and hay, and allowed only little exercise. He had been to water about two hours before. The weather being intensely cold, the horses were watered only once per diem. The stomach and intestines were full of fluid, and I have little doubt that the horse, which was of a vicious choleric temperament, had galloped to and from the water. The lungs bore evidences of chronic disease.

Feb. 1st.—I have had another case, similar to the above, only that the lungs in this case were perfectly healthy, excepting the congested state of the vessels consequent on so sudden a death.

3. ERYSIPELAS GANGRENOSUM.—February 17th, 1856.—My attention was called to a horse which refused to eat, I examined him, and found the supra-infero part of the neck swollen, hot, and tense; pulse 28, and feeble; animal dejected; breathing natural. I could obtain no information regarding the state of the bowels, nor indeed anything beyond the fact, that the horse had no appetite. I ordered a warm mash, and gave Aq. Nitras Pot., also hot fomentations to be continually applied to the swelling, for an hour. At the expiration of that time, I again visited him, but found no remission of symptoms. Ordered the fomentations to be continued, gave a dose of Ant. Pot. Tart., and left him for the night. The next morning, I found that the tumefaction had increased, involving the head and eye, and instead of a smooth, tense surface, it was interspersed with raised blotches. I scarified one, but nothing flowed, as I almost expected. I now ordered hot vinegar to be applied, sent the sices away, and from my pharmacy door watched the patient. He rested his head on the manger for some time, remaining during it immoveable. I was on the point of going away, when I noticed a sudden start, as if something had alarmed him, when he again relapsed into a semi-comatose state.

Having many other patients to see, I left a man with him, and when I returned in the space of two hours, I was informed by the man that the horse was "frightened," and had jumped three or four times. I found that diaphoresis had been induced, which I hailed as a good omen; the tumefaction continued increasing so much, that I could not take the pulse at the submaxillary or temporal artery, therefore had recourse to the radial, and, after a little difficulty, felt it weak and tremulous, and nearly 70 per minute. The mucous membrane of the nostrils was slightly congested, but on inverting the eyelids I found the lining thereof of a scarlet colour and also tumefied. The raised patches became more numerous, the breathing more difficult; and the animal started, as if from a deep slumber, but instantly relapsed into a comatose state. Finding that the tumefaction had extended to the pectoral muscles, I ordered to that part a sinapism, scarified the head and neck, and gave Camph., ʒij, in ball. From this time, the symptoms kept increasing in violence, and at ten o'clock in the evening the animal died. I considered it to be an attack of erysipelas gangrænosum.

4. NEURALGIC DISEASE.—Nov. 19th, 1855.—My attention was directed to a case of what the Sices called "shivering," but the Begeer "chok munzee." The animal was well-bred, and very fretful, evincing when in motion no symptoms whatever of ill-health. I ordered clothing, and as my hospitals were full, directed that he should be brought to me again in a day or two. In three days after, I saw him again, and had him taken into the hospital as he seemed to be worse, there being convulsive twitchings of the facial, brachial, and gluteal muscles. The animal was in fair condition. I ordered mashies, and a little Sod. Chlor. to be sprinkled over them. In two days, I commenced giving small doses of Acid. Hydrocy. et Nux Vomica; the former one hour before feeding in the morning, and the latter two hours after feeding in the evening. I continued this treatment with mashies for several days, having him exercised and hand-rubbed well every day. In three weeks, he seemed much better, although, at first, I thought the medicines made him worse. I discontinued them for a week; but he was soon "shivering" worse than ever. I accordingly renewed the treatment, and continued it to the sixteenth day, when all unfavorable symptoms had ceased. I kept the horse, however, till Jan. 23d, when no return having taken place, I discharged him from the infirmary.

I have many cases of enteritis, but there is nothing new in them. I may promise you a line or two on influenza as it shows itself in this place, at some future period.

Feb. 16, 1856.—As spring is now advancing I hope to be fortunate enough to get some herbs indigenous to this country, and if so, my chief pleasure will be to transmit specimens of them to you. I have been lately using an underground stem, called by the learned "*Cochlearia armoracia*," *vulgo* horseradish. In consequence of my being minus medicines, I have been *obliged* to exercise my faculties a little, and try to obtain other agents than those usually resorted to. I know not whether this plant has been used in veterinary practice before, but it has become a favorite remedy with me. It, however, differs much from the kind we see in England, and in consequence of its immense size, being in many instances six and eight inches in diameter, I have called it "*Cochlearia armoracia giganticus*." Being one day in a "brown study," for I had many horses needing stomachics, and not being able to procure the usual agents—"Youk Johnny" being the answer to all my inquiries at the bazaar—I was interrupted by the entry of an officer who lived close to me—Captain Pilcouski, of the Polish legion—having a piece of beef in one hand, and in the other what I took to be the trunk of a small tree; but he informed me that it was first-rate stuff with beef! I examined it, and immediately thought that the "condiment" was just the thing I wanted. I at once made an infusion of part of the treasure, and its effects were marked. Having then many cases of "Zouk Munzee," I gave it in three fluid-ounce doses one hour before feeding. As a tonic I find the infusion useful; but I have ascertained that it must be fresh made or it is almost worthless, the active principle seeming to be very volatile.

To-day I have had a fresh arrival of 119 horses from Rustchuck, and expect 500 more by March 10th, so I am not only much engaged now, but am likely to continue so. A few days ago I went to Cavahnah, some twenty miles higher up, with the Commissariat-General here, to see the cattle, which are dying in great numbers. The disease is an epizootic and varies but slightly in any of the cases. Sometimes it is attended with diarrhœa, and sometimes with angina. The general symptoms are—dulness, refusal of food, the animal lies down, resting on the sternum, and occasionally turns its head round to the side; mucous membranes of a dull leaden hue. In some cases viscid saliva flows from the mouth; in others, a little froth only, the hams and extremities are cold, the pulse

imperceptible, coat unthrifty in appearance; and the finest cattle are first affected. From the contractors I hear that it is also raging in Mongolia, in Prussia, and in Austria. It has been very rife at this place and the one above named, also at Zissopolis (Commissariat Stations).

Believe me,
Yours, &c.

ON THE TREATMENT OF CANKER.

By G. ARMATAGE, V.S., Sheffield.

“AN OLD PUPIL” inquires, in your number for March, for the best mode of treating canker. If the following should prove a beneficial addition to his usual plan of treatment, or be of any service whatever to him in his troublesome task, I shall be amply rewarded.

As it regards Dressings.—Your querist enumerates a goodly number of remedial agents which he has employed, but, as he says, too often with disappointment. I can fully sympathise with him in that respect. Judging, from their omission, that the following have not been used by him, I therefore briefly give them.

Acetate of lead, made into a paste with nitric acid, and plentifully applied to the exuberant growths, will be often found of great service. It, however, requires to be frequently used.

The sesquichloride of antimony also deserves mention, to be alternated with the above.

The bichloride of mercury, dissolved in hydrochloric acid, has produced very remarkable effects. The proportions used are:

Hydrarg. Bichlor., ʒiv ;
Acid. Hydrochlo., fʒiv ;
Aquæ, fʒxx .

It is applied by means of some tow, on a stick.

The protochloride of mercury, applied in the state of powder, giving pressure by means of the shoe, or otherwise, has often afforded so much benefit, as to warrant further trials of it.

Mechanical Means.—No practitioner, I think, in attempting to cure a cankered foot, will rely solely upon simple dressings; mechanical pressure being their concomitant, and of the utmost importance. This may be obtained in two ways. The most simple is that of paring down the crust or wall of

the hoof, until the frog and solar surface are at every step brought in contact with the ground ; the animal being left without shoes. Of course, the paring down of the crust must be done sufficiently often, so as to keep pace with its rapid growth. If the animal cannot go barefooted, then the most convenient method of applying pressure is by means of an iron plate adapted to the sole of the foot, and made up of two halves.

This plate should be constructed of tolerably stout sheet-iron, about one eighth of an inch in thickness, the circumferent edges being thinned, so as to pass under the shoe. The whole, when ready for use, must be a little wider and longer than the inner web of the shoe. At the front and back of the plate the two halves are jointed by rivets, on the ground surface. Across the jointure two bars are placed, one on each half of the plate, which are likewise united by a rivet, thus allowing of their being turned on one side, or parallel with the long diameter of the plate. The opposite end of each bar has a hole to admit a countersunk screw, and which, by means of a screw-driver, is passed into a hole on each plate, tapped for the purpose, thus keeping the whole firmly together.

However unique our means may be for applying pressure, it does not produce the same results as being barefoot ; because, first, the rapid growth of the wall is constantly taking the diseased parts from the seat of pressure ; and, secondly, from the fact of the foot being kept covered, it favours the growth of the fungoid excrescences ; added to which, the pain occasioned by the necessary frequent removal and hammering on of the shoes, makes the case one of the greatest inconvenience, to say the least of it, to both practitioner and animal.

Having noticed this disease to some extent, and the character of the horses in which it is most frequent, I am of opinion that if more attention were paid to the "shoeing department," and also to the sanitary condition of the stabling, the disease would be of seldom occurrence. Go where we will, we find smiths who are more fond of cutting away of the heels, scooping out the soles, and, with the rasp, polishing up the outer surface of the outer wall, than is consistent with the welfare of any horse's foot ; and, as a result, we have long toes, low heels, and weak feet, such being the obvious causes of corns, sesamoiditis, and other incidental lesions, &c.

Returning to the subject of pressure, I dare say many practitioners have seen its wonderful effects in that disease termed frush, or thrush. Miles* mentions two cases which

* Miles, 'On the Horse's Foot,' p. 57.

were cured by causing the animals to stand during four months on "wet sawdust;" to which he attributes the cure. My own experience affords numerous instances where pressure alone was the curative agent. Percivall* gives as the cause of frush, "diminished function," and paring away of the frog; placing shoes on too high at the heels; leaving the heels of the foot too high, &c. And in his directions as to treatment,† he urges "restoration of the frog's natural office." All this shows the great importance of pressure, not only to the diseased, but to the healthy foot also. M. Fischer,‡ in treating canker, used pressure conjointly with dressings.

Notwithstanding what has been said and done with regard to canker, and its cure, I think a large field is yet open for extensive investigation, as it regards the preventive mode of treatment; and, in all sincerity, I recommend a trial of maintaining the proper functions of the foot by allowing due pressure. Nature protects the sensitive parts of the foot by the horny box. Why should we, at every shoeing, cut and rasp so much away? The healthiest foot is always active in secreting horn, the solar surface soon becomes level with the crust, and desquamates by its own inherency. The same also occurs with the frog; but the crust, whose fibres are in an opposite direction to the secreted layers of the sole, cannot desquamate. Therefore, let the sole and frog remove their own useless portions (except when ragged appearances present themselves in the latter), and that portion of the crust which is prevented from being torn away by the presence of the shoe, let it be carefully levelled; the toe shortened, so as to lay the shoe both on the wall and sole, and proper attention be always paid to the removing or the shoeing of the animal. By this means, I am certain none of the evils alluded to will ever occur; and a glance at the accepted physiology of the various structures of the foot will, I am sure, justify such a course of treatment; and this is not to be considered as mere theory, for under my own cognizance it has for at least ten years stood the test of practice.

In addition to the treatment above named, I cannot conclude without observing that internal and other remedies must not be forgotten, depending on the state of the patient at the time; such as the application of cold lotions to the inflamed absorbents, or fomentations, &c., with laxatives, febrifuges, tonics, and diuretics internally.

* Part ii, vol. iv, p. 431.

† Ibid., p. 436.

‡ 'Veterinarian,' Feb., 1853, p. 96.

CASE OF MELANOSIS IN THE HORSE.

By C. W. MOORE, Assistant to R. ROLFE, V.S.,
Harleston.

THE following case of melanotic depositions, affecting the thorax in particular, came under my notice in the month of January, 1856.

The animal was a grey mare, twenty years old, the property of George Cathew, Esq., of this place. She had been several times, during the last few years, the subject of an attack of œdema, commonly called farcy, in one hind limb, and as there were some hard substances situated over the parotid glands, it was thought that these had formed as a sequela of these attacks. The last time she was taken with farcy in the off hind leg. It subsided after the usual course of treatment had been adopted, but a large tumour was left situated on the top of the scapula. It was about the size of a child's head, but not painful when pressure was applied to it, nor was she lame when trotted. The groom told me that there was, every morning, perspiration perceptible on the near side, over the ribs and shoulder, which extended up to the tumour. I thought there might probably be similar tumours within the chest, and I informed the owner that the animal might live some little time, but I feared it would not be long, as I had suspicion of some thoracic disease; there being present a quickened pulse, and a short cough; but the breathing was not accelerated, and she was not off her feed, while she did her work as usual. I promiscuously called and looked at her about a fortnight after, when she was standing up feeding, and appeared as well as usual. A few hours after this the man came to tell me the mare had fallen down, stretched her head and legs out, and died without a struggle. She had gone a short journey of eight miles, drawing a phaeton, two days before this.

Post-mortem examination.—The viscera of the abdominal cavity were quite healthy, with the exception of slight venous congestion; but the thorax, as I expected, was the seat of disease. There were at least three pailfuls of water in the chest; the diaphragm, pericardium, and pleura costalis were covered with melanotic deposits or tumours varying in size from a nutmeg to a large orange. The diaphragm was thickened, the pericardium ruptured in several places, and the heart so diseased that I could with ease pass my finger through its walls. The right ventricle was filled with coagu-

lated blood. There were also a great number of these deposits around the vena cava and posterior aorta. The lungs were only slightly diseased, the right lobe being principally affected. These abnormal deposits adhered so firmly to the parts that it was with difficulty they could be separated, they were quite black in colour, and hard. The tumours over the parotid glands were exactly similar.

I would ask, had the pericardium become filled with water and become ruptured when the mare threw herself down and died? I think it is surprising that the mare did her work in such a diseased state.

PRESENTATION OF A TESTIMONIAL TO PROFESSOR SIMONDS.

LONDON; *April 11th*, 1856.

DEAR SIR,—Will you kindly give insertion, in the forthcoming number of the *Veterinarian*, to the accompanying particulars of the presentation of a testimonial to Professor Simonds, which took place on the evening of the 10th of April, in the theatre of the Royal Veterinary College.

I am, sir,

Yours obediently,

J. B. HALL,

Secretary to the Committee.

TO PROFESSOR MORTON,

Co-Editor of the 'Veterinarian.'

At a Meeting of the Pupils of the Royal Veterinary College, held in the theatre of that institution, on the 2d of November, 1855, it was resolved that a testimonial be presented to Professor Simonds, by the students at the college, and that the following gentlemen be elected as the committee for the purpose of carrying out this desirable object ;

President.

Mr. F. G. C. SHAW.

Mr. C. Cartwright.

Mr. W. H. Crowhurst.

Mr. H. Burt.

Mr. T. W. Gardner.

Mr. J. T. Lupton.

Mr. G. Hayes.

Treasurer.

Mr. J. Field.

Secretary.

Mr. J. B. Hall.

All preliminary arrangements having been perfected, the

presentation took place in the theatre, on the evening of the 10th of April; the president of the Royal College of Veterinary Surgeons, the professors, and their friends, and likewise the whole class of pupils being present.

The testimonial, which consisted of a very handsome silver tea and coffee service, bore the following inscription :

PRESENTED TO
JAMES BEART SIMONDS, Esq.,
PROFESSOR OF CATTLE PATHOLOGY,
BY THE
STUDENTS OF THE ROYAL VETERINARY COLLEGE,
Session 1855-6,
AS A TOKEN OF RESPECT AND ESTEEM,
APRIL 10th, 1856.

Mr. Shaw occupied the chair, and in presenting the testimonial spoke as follows :

Gentlemen,—I am not going to encroach on your attention with expressions of diffidence, or modest professions of inadequacy to fulfil the duty that so honorably has devolved upon me this evening.

“You all know that I am no orator, and indeed, though the quality of good speaking is a precious one, it would only to a limited extent increase the interest attaching to the object that has brought us here together on this occasion.

“We are all sensible of the numerous advantages conferred on us by the unremitting zeal and activity, and the talents brought to bear by Professor Simonds in his capacity as one of our teachers ; and it is therefore with all sincerity and confidence, that I assure you, sir, on the behalf of my fellow-students, that they all feel lastingly indebted to you, and heartily join with me in wishing you a long, long life of health and happiness ; also that in enjoying the many privileges inseparable from your high station and calling, you may continue to devote your attention to the good of our profession, and that to all of us may be spared one who has manifested so much concern for our present intellectual improvement and for our future welfare.

“I am sure, gentlemen, you will spare me the needless trouble of attempting to show the importance to us of that which interests and occupies the attention of Professor Simonds. You must be aware in what high estimation he is held by many men of learning, as well as by that noble body of gentlemen constituting the Royal Agricultural Society of England, with whom the professional opinion of Mr. Simonds is invariably decisive and acted upon. Professor Simonds, in

the exercise of his calling admirably combines science with practice; and it is the principles acquired by himself that he endeavours to instil into us. His happy, seductive, and convincing mode of imparting knowledge frees his lectures from that aridity and tedium which might otherwise attend discourses on such difficult topics as those with which he is daily occupied.

“To be laconic, I should say that for all the qualities that can ornament a gentleman of learning and a professor, Mr. Simonds conspicuously shines.

“Reiterating, therefore, sir, the assurance of a deep sense of the obligations we owe you, I have the pleasure of presenting to you in the name of my fellow-students, this silver tea and coffee service, which I pray you to accept as a token of their esteem, respect, and gratitude.”

The presentation having been made, its reception was suitably acknowledged by *Professor Simonds*, who, in the course of his observations, remarked that it might possibly be true that the division of science he had the honour of inculcating the principles of were not so attractive as some other branches of their studies; and if this were true so much the more must he appreciate their kind reward of his efforts.

“Your chairman has referred to my position as connected with the Royal Agricultural Society of England, and the general satisfaction that my professional advice on difficult questions of pathology has given the society. But, gentlemen, it must be remembered that I am but the exponent of the united skill of the officers of this institution. Each of your teachers assists me, and thus gives the society the benefit of his knowledge. Placed in this situation by the governors of the College, whose object at all times is to benefit the veterinary profession, and as it is in the yards of the farmer that the stronghold of the charlatan exists, I, in common with my colleagues, have endeavoured to displace these uneducated practitioners by the introduction of men of education and scientific attainments. The society freely acknowledges the benefit of our efforts, and it desires to maintain the union which happily now exists between the two institutions. It gives, as is well known, a large sum of money annually to the College, and this, doubtless, it will continue to do so long as we labour to accomplish so desirable an end.

“With regard to that branch of pathology with which I am connected, permit me to say that it is a rising division of veterinary science; and that according as the value of cattle increases so will the medical attendant be esteemed by the amount of professional knowledge which he brings to bear in the treatment of their diseases. Therefore, allow me to add,

as a somewhat old member of the profession, that you as students must give an equal degree of thought and earnestness to this as to the other branches of your study. And especially would I remark that proper attention must be given by you to the principles of chemistry, for few persons can but have noticed that the high state of cultivation that our fields and pastures have lately been brought into by the use of artificial manures tends to the production of disease among cattle and sheep, in particular; and the veterinary surgeon often finds that it is where this high farming is carried on that the greatest number of his cases occurs, and those too of the most interesting kind; here, then, you will have to bring your chemical knowledge to bear in the prevention of these diseases. As yet but little is known as to the effects produced by the too free employment of artificial manures on the health of animals and of plants.

“You have asked me, gentlemen, to accept this service of plate in testimony of your respect, and this I do, as freely as it is offered. I accept it as a stimulus to future exertion. I accept it as a memento of your kind feelings towards me, and I accept it as an heirloom for one who is to follow me; who, as often as his eyes rest upon this token of your esteem, will see that his father’s exertions were appreciated by those among whom his lot in life was cast; and I hope he, too, will be stimulated by it to do his duty in whatever position a kind Providence may be pleased to place him. I therefore value this testimonial above any intrinsic worth it may possess, for beyond ordinary energy and exertion, I have but few claims upon your thanks, and still fewer upon your kindness and respect, yet is it pleasant to my feelings to be thus made the recipient of both.

“Gentlemen, the time is now approaching when you will have to pass an ordeal which is the commencement of your public life, and most sincerely do I wish you success; and not only then, but also afterwards. It always gives us pleasure and satisfaction to know it—for I am sure I am expressing the feelings of my colleagues in this assertion—that you have rightly employed the knowledge which we have endeavoured to impart to you; and fervently do I hope that you may even be held in such estimation by your employers, as that you some day will receive from them a similar testimonial to this which I have now the honour to receive from you.”

The company then adjourned, by invitation, to the board-room of the College, where refreshments were provided. Sundry toasts and healths were drunk, and the remainder of the evening was passed in the like pleasant and agreeable manner as that with which it commenced.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Lecturer on Veterinary Medicine and Surgery, London.

(Continued from p. 225.)

INGUINAL HERNIA.—In the ‘Belgian Annals of Veterinary Medicine,’ for last May, is published a report by a student, Haagen, of a case of inguinal hernia occurring in the horse, which had been under the care of Professor Delwart.

On the 20th of November, 1854, M. Lambotte, farmer, at Waterloo, took a three-year-old entire horse to the College Infirmary to be treated for a soft elastic tumour situated in the left inguinal region. The swelling was about the size of an infant’s head, and, though perfectly reducible, somewhat interfered with the horse’s action. It was a clear case of non-strangulated inguinal hernia.

From its size, fears were entertained by Professor Delwart, as to whether, in performing the usual covered operation for hernia, a sufficiently strong bond of adhesion would be obtained to support the gut within the abdomen, and prevent a relapse. The professor, therefore, resorted to another plan, that is to say, of reducing the rupture, and applying a pair of iron clams, purposely constructed, over both cords and scrotum. The clams were about a foot long by two inches broad, and slightly convex. They are composed of two equal blades, about a line in thickness which correspond by one of their borders, and are capable of being opened or closed at will by two screws, one at each extremity. The clams thus present a small surface of pressure with considerable strength and fixity; in short all the necessary conditions for exercising a firm, equable, and complete compression.*

It was on the 2d of December that Professor Delwart performed the operation, having had recourse to etherization to diminish the consequent pain, do away with the strong muscular contractions, and thus to operate more handily. Barring a little constitutional excitement, two hours after the performance of the operation, no derangement occurred.

* It is very clear that Professor Delwart’s clams are a modification of the usual iron clams, used in castrating with the red hot iron. What in the usual clams constitute the handles, are in Delwart’s, simple extensions of the blades, with a screw at either end. It would appear advantageous to me to have a hinge at one extremity.

On the 3d and 4th, the animal is fed as usual, having been kept on low diet the 2d. The compressed parts are perceptibly colder.

On the 5th and 6th, is a slight tumefaction round the imprisoned tissues, associated with a little serous transudation through the skin.

On the 7th, the serosity is more abundant, and besides, which, there is an œdematous swelling above the clams, especially on the left side.

The 8th, the mass, bathed by a fetid and highly coloured serosity, is flaccid and much less tense; it begins to separate from the clams anteriorly. The chloride of lime is used to disinfect, and as the depending parts are large and weighty, a linen suspensory is used to prevent traction on the cord.

On the 10th of December, that is to say, eight days after the operation, one testicle is found on the litter. The other, with the remaining parts, has only a small attachment, and the slightest traction exerted on the clams separates them from the adjacent structures. A bandage is applied over the wound which is bathed several times daily with an emollient lotion.

Suppuration began on the 12th, and on the 16th, there was slight increase of swelling on the left side.

On the 9th of January the indolent tumefaction is diminished, but on close examination the cord is found to be indurated. M. Delwart cast the horse, and removed the thickening, after which troublesome hemorrhage supervened, although the cord had been tied. Firm compression, and the actual cautery, had to be used to suppress the bleeding. All went on more or less favorably till the 9th of February, when the horse, perfectly recovered, without vestige of hernia, was removed from the infirmary.

Were Professor Delwart's apprehensions respecting the probable issue of the common covered operation well founded? It is unfortunately too true, though not generally observed in the horse, that the adhesive plug formed in the operation for hernia is not strong enough to support the gut, more especially if the opening is in a depending part. When practising at Thirsk, in Yorkshire, I was called upon by Mr. Bell's gamekeeper to attend a valuable young pointer with umbilical hernia. I resolved to perform a somewhat new operation, that is to say, to reduce the hernia, cut into the skin, and tie a strong ligature round the neck of the hernial sack, which in these cases is a prolongation of peritoneum with condensed areolar tissue around. Accordingly I did so, and to be more sure passed a metallic suture through the lips of the abdominal

walls at the umbilical opening. The apparent result was a speedy and radical cure; but three weeks after the operation, contrary to my orders, the dog was let out of the kennel, and in his gambols about the garden ruptured himself again, showing that the adhesions were not firm enough to sustain the weight of the gut. Such is not usually the result when a ligature or clams are passed round the skin without cutting with the knife. The retraction of skin during the formation or cicatrization is favorable to the radical cure of pendulous hernia; and to effect this it has been suggested that the skin over an umbilical hernia should be rendered sore by some caustic leaving a raw surface to cicatrize capable of great retraction.

This operation, repeated at stated intervals, leads to inflammation of the skin, and plastic effusion. The integument becomes indurated, the gut is thus pressed up through the umbilicus, and is retained there by the permanent shrinking of the ilium. The first case treated in this manner I saw in Turin. It was a child under the care of my friend Dr. Luigi Vella; and since then, on my late visit to the Alfort School, I witnessed a horse under a similar treatment for exomphalus, and M. Reynal assured me that he cauterized cautiously, and the case was tardy, but that he expected the result would prove satisfactory. From what I have stated, it must be apparent that I consider Delwart's apprehensions in a measure well founded, and he is not indeed the only individual that has thus been in doubt, as we shall see further on.

Was Professor Delwart's operation original, scientific and was his instrument the best he could use? Respecting the originality of the operation it may turn out that such a means has never before been adopted in hernia, but, as a method of castration, the complete ablation of scrotum and testicles is an old practice usually qualified as "barbarous." The "boxing rams" is the same thing; and in the Roman states castrators of horses adopt the plan very extensively. I have a very singular specimen by me, which came from Rome. It consists in the scrotum, with its shrivelled up contents, attached to a pair of strong wooden clams; these are a foot long, slightly curved, and presenting a surface of pressure upwards of an inch in width. The testicles, before being subjected to pressure, are arranged one in front of the other, and great strength is evidently required to close the ends of the clams, which are closely tied and bound round with stout pieces of sackcloth. Had I to perform such an operation I think I should prefer the wooden to the iron clams, for lightness, and compressing, as they do, a large

extent of surface, ensuring death and shrivelling of the testicles, without sloughing, as evidently occurred in M. Delwart's case; for we are told that on the 10th of December one testicle was found on the litter.

Some persons might be inclined at first sight to condemn this operation as "unscientific" and "barbarous." As a method of castration we unhesitatingly discard it, but as a plan to be adopted in exceptional cases, it behoves us to consider before we unconditionally condemn it. I cannot see that it is any worse than clamping the integument over an umbilical hernia, a practice even with the best human surgeons, but which I trust will ere long be superseded by something better.

A plan that seems to deserve greater consideration than Professor Delwart's, is one adopted by Mr. Marshall, of Dungannon.* Mr. Marshall operated, *à testicule couvert*, on the affected side, the other testicle being removed in the ordinary way. He then inserted two strong metallic sutures above the clam, as close to the abdomen as possible. "The clam on the left side remained on until it sloughed off; the metallic sutures were not removed for a considerable time after." The late lamented editor of the *Veterinarian* justly commended Mr. Marshall's practice by stating that the case was "very interesting," and had been "judiciously managed."

STRANGULATED INGUINAL HERNIA REDUCED BY THE RECTUM ; CURE.—This case occurred under MM. André, of Court Saint Etienne, and Lecouturier, of Walhain Saint Paul. A cart-horse stallion, ten years old, the property of a Belgian farmer, was taken with colicky pains about ten o'clock in the evening of the 23d of July, 1854. M. André was called to the horse directly, and he saw him three hours after the signs of discomfort had appeared. He found him pawing, rising and lying down, with the pulse almost normal, no appetite, and constipation without distension of the abdomen; the left scrotal cavity is more voluminous than the right, and contains fluid amidst which the free testicle is to be felt of normal size. This is simply chronic hydrocele, and M. André diagnosed the case as one of impaction of the large intestines, or of a stercoral stoppage; he treated the case accordingly. But about four in the morning, the pains kept increasing, and Lecouturier is consulted by André. The pulse is sharp, wiry, and at 65; otherwise the same symptoms persist as yesterday. The diagnosis was always doubtful till Lecouturier suggested the physical exploration

* See the 'Veterinarian' for 1854, p. 84.

of the internal inguinal openings per rectum. Accordingly a piece of gut was found to be strangulated on the left side. Three attempts were made to reduce it by the rectum, and the third was crowned with success, one of the folds of the gut having been seized and drawn out. It was found that any assistance by pressing up from below rather interfered with the reduction. The whole time they were engaged in this effort did not exceed twenty minutes. The strangulated gut was a portion of the small intestine, a small fold of it being imprisoned in the ring.

After the reduction, all pains ceased; no cure was attempted with the chronic hydrocele, and thus it has remained ever since, as it was before. Such instances are evidently rare; Lecouturier, in eighteen years' practice, has only seen one case, which occurred two years before this one just related, and André had never witnessed anything like it.—*Ann. de Méd. Vét., Bruxelles*, June, 1855.

An eulogium is passed on MM. André and Lecouturier by the reporter of the above case; still it is said, that they would have more readily formed a diagnosis, if they had followed the advice of Hurtrel d'Arboval, but especially of Delwart, on inguinal hernia. It shows (says the reporter), that to be a great practitioner, it requires judgment, and still more learning. Unhappy is he who thinks he knows all!

I presume that this stricture has been passed because the outward pathognomonic signs of incarceration of intestine in the inguinal canal were not sought after. D'Arboval states, and Delwart *copies* from him, that "the pulse becomes wiry, the eyes red, and pupils dilated; slight colicky pains manifest themselves, and are continued or intermittent; the testicle, on the side where the hernia exists, is retracted, and is moved alternately upwards and downwards. This irregular movement, the more frequently repeated the stronger the pains, is one of the pathognomonic signs which merits the most serious attention, and should constantly induce the veterinarian to explore the inguinal opening."

Agreeing as I do with the sentiments expressed in the foregoing criticism, I cannot accord that Lecouturier deserved anything but praise. He demonstrated a degree of intuitive perception which has procured the highest encomiums for many practical surgeons. Amongst these, Dupuytren takes the foremost rank; and we might almost class the diagnostic skill displayed with that which has been required in man, to discover and operate upon an obturator hernia, or in the detection of the exact seat of an invagination, and reducing it by surgical means. It shows that such cases are rare,

hence mostly unsuspected, when, perhaps, only one or two instances may occur in a practitioner's lifetime; and my father, in his long experience, remembers but one, which he dissected after death, in the early days of his career, when in Naples.

Respecting the mode of reduction adopted. It is an old plan; though, generally, a horse is cast and placed on his back, that the parts may be in a dependent position, favorable to being set free. Mr. Hurford, in the *Veterinarian* for 1852, at p. 244, says, "I do not find the introduction of the hand into the rectum of much use, if of any." It is to be presumed, that when but a small knuckle of intestine is caught, it is not required to lay hold of it with so much force as when a large portion is protruded. It must be observed, however, that André only succeeded in the reduction the third time of trial.

As I am treating on inguinal hernia, there is a third case which occurred in the Alfort School, in 1854, and which merits a mention here. I transcribe it as given in the *Repertorium* for July, 1855, after the *Danish Veterinary Journal*.

Stokfleth relates the operation for strangulated inguinal hernia, as he saw it performed by Professors Bouley and Colin, on his visit to the Alfort School. The disease is much more frequently seen, says Stokfleth, in France than elsewhere, inasmuch as there are more horses kept entire; in the month of August, the number that had been operated for hernia in the course of the year, in Alfort, was twelve, of which two died.

A stallion was brought to the college with colic, and he was immediately examined, should there be a strangulated hernia: the scrotum on the one side in the vicinity of the abdominal ring is swollen and painful, and the swelling formed by intestine is separated from the testicle by a singular furrow. The hand in the rectum traces the strangulated gut up to the abdominal ring. This having been ascertained, the horse is cast, and narcotized; three of the limbs are brought together and fixed, the fourth, next the hernia, is fixed to some firm object at a distance; the hoof is cleansed thoroughly, that in the horse struggling, particles of dust may not be kicked over the intestine when exposed. The skin of the scrotum is cut through, and dissected round the tunica vaginalis, taking care that it should be widely separate at the upper part, that the clams may be applied sufficiently high up. A small incision is then made in the tunica vaginalis to admit of the passage of the herniotomy knife. This instrument is carried towards

the outer side of the tunic, and it is cautiously sought to pass the instrument beyond the strangulated part; the blades are then pressed open, and the cut made in retracting the instrument. The cut is made towards the outer side, because here lies the cremaster, and a wound of the inguinal canal, which might be associated with bleeding, is thereby avoided. The return of the portion of intestine is effected in part by slight retraction and then manipulations pressing it inwards. The clams are thereupon applied as high as possible over the vaginal tunic, and are left there for two or three days. The horse is not let loose directly; and to guard against peritonitis he is bled, and mustard is applied over the abdomen.

Bouley's herniotomy knife is in the form of closed scissors, and has a concealed blade which can be pressed out by a screw during the operation. From the repeated observation of such cases as seen at Alfort, the conclusion has been arrived at that the incarceration of the intestine does not occur in the inguinal canal itself, but that the tunica vaginalis at its lower part forms transverse folds, inducing compression and constriction of the gut.

I need scarcely say that the sinapisms and bleedings were out of place, and that it is advisable to keep the clams on longer than Stokfleth tells us is done at Alfort. In Lyons the clams are allowed to drop off with the testicle, which is often not cut away at the time of the operation. The explanation of the constriction of the gut in the inguinal canal is interesting, but does not deserve unqualified acceptance. Nor, indeed, do I think it is the right construction to be admitted, except in an exceptional case, for we know that strangulation of a gut protruding through a natural or an artificial opening occurs in two ways. 1st, If the hernia be of old standing, a fresh portion of intestine or omentum slipping through, in consequence of some accidental circumstance, distends the hernia, and compression, hence strangulation, occurs at the neck of the sac. 2dly, In young animals, during violent action or sudden effort, a piece of gut slips through an opening not sufficiently large to admit of it, except from over distension and pressure. The opening does not readily adapt itself to its new contents, and rapid strangulation is the result.

One point may be referred to which regards the performance of the covered operation for castration. The skin of the scrotum is carefully dissected from the tunica albuginea, and from the cellular tissue being loose, the process is not altogether an agreeable one, the parts being apt to slip

and slide under the fingers. The operation is much more readily performed according to Rey's method of incising the skin and then detaching it from the tunica albuginea by the fingers, tearing or pulling them asunder. It is very readily, very rapidly, and very effectually done, so that the tedious dissection may be avoided.

(*To be continued.*)

16, UPPER WOBURN PLACE.

Facts and Observations.

TUBERCLES IN THE LUNGS OF A PONY.

AT a recent meeting of the Pathological Society, Dr. Quain presented for Dr. Babington a specimen of tubercles in the lungs of a pony. The animal had had a cough for at least nine months. The cough got better while the animal was doing light work in the south of England, but on, returning to town some three months ago, the cough got worse. The animal became lame, first in one hind leg, then in the other, and finally the jaws became rigid. These symptoms were attributed, by Dr. Babington, to rheumatism. About a week ago, the animal's breathing became very difficult and hurried, and death took place three days since. The only organs found affected after death were the lungs. They were much congested, almost hepatized in some parts, and they were studded throughout with yellowish masses, in size from a grain of shot to a pea. They resembled, but were larger than, miliary tubercles in the human subject. Many contained nodules about the size of pins' heads, of a bony hardness. Before the blow-pipe these swelled, and then dwindled away to a small portion, which, being heated, passed into pure lime. There were no cavities. Dr. Quain had examined the deposit with the microscope, and found it to consist of abortive cells, earthy, fatty, and granular particles, with the elements of the pulmonary texture — a specimen very clearly showing the seat of the deposit in the pulmonary cells.—*Medical Times and Gazette*, March 22, 1856.

SECOND NOTE ON THE PHYSIOLOGICAL TEST FOR STRYCHNIA.

By MARSHALL HALL, M.D., F.R.S., &c.

SIR,—I have been enabled to detect the $\frac{1}{2500}$ th part of a grain of the acetate of strychnia.

The *young* frog fresh from the pools is the most susceptible to the influence of this extraordinary agent.

All young animals are more susceptible than the adult of the same species.

The frog is most susceptible of all. It is not less strychnoscopic than galvanoscopic.

In proceeding with an inquiry we should *begin* with the frog, because it is the *most* detective. We may proceed to use other animals, but these can only detect a *larger* dose of the poison, and they are in nowise more satisfactory. The phenomena in them are less distinctive even than in the frog.

In one case I gave $\frac{1}{6}$ th of a grain of the acetate of strychnia to a cat. It proved fatal. Some time having elapsed, Mr. Lloyd Bullock prepared the contents of the stomach, and we induced strychnism in *three* frogs in succession. The dose of poison would scarcely have affected another cat or a rabbit.

A kitten was killed by $\frac{1}{50}$ th part of a grain, and an adult cat by $\frac{1}{30}$ th of a grain of the acetate of strychnia. This would, I should think, not have been detectible by another kitten or cat, as taken from the stomach. But many times less would be detectible and demonstrable by means of the strychnoscopic frog.—*Lancet*, March 29, 1856.

EPIZOOTIC AMONG ARTILLERY HORSES AT GALATA-SERAI.

A VERY suspicious epidemic has broken out among the Artillery horses belonging to battery stationed in Galata-serai. On Wednesday last the horses were as usual taken to be watered at the troughs erected within the enclosure of the building. Soon after they returned, the horses, which had been quite well before and in excellent condition, began to show symptoms of uneasiness; they refused to eat and became restless. This restlessness soon turned into a spasmodic nervousness; the horses began to tremble in all their limbs,

and the palpitations of the heart were so violent that they could be distinctly heard. In spite of the efforts of the veterinary surgeons attached to the battery, these symptoms in some of the horses soon changed into a state of the most acute agony. They stood up erect on their hind legs, or threw themselves in violent convulsions on the ground. The muscles seemed to become rigid in some, while others swelled to an enormous size. By the next morning thirteen of them were dead, while all the horses which had gone out first to water were more or less ill. Several of the horses were opened, but nothing was found except a congestion of the intestines, scarcely sufficient to cause death. Since then the intestines have been sent over to Scutari to be chemically examined by an analytic commission formed for the purpose. Of course, until this inquiry is concluded, it is impossible to say what the cause of this sudden illness and death was, but all the circumstances which have hitherto come to light seem to point out a case of poisoning on a large scale. The first idea suggested was that some poisonous plant might have impregnated the hay, but on examination not only no trace was found of this, but likewise, although all horses received the hay indiscriminately from the same bales, there were many which were not attacked. All the horses that died and that were seriously attacked belonged to the first batch that was taken out to water. When they had drunk, the water in the troughs was removed, and the second batch, the troop of Captain Oakes, of the 12th Lancers, which drank from this water, showed indeed symptoms of illness, but none died. A detachment of Artillery horses and the other troop of the 12th, that had been out drilling, came in late, and which were only watered in the afternoon, when the water had again been removed, were not attacked at all. Besides this, all the horses which died were those which drank from the troughs in the middle, where the water runs out from the fountain, while those that drank more towards the end escaped altogether, or were only slightly attacked. One driver deposes that, of the two horses in his charge, one which seemed very thirsty and drank a great deal, was one of the first dead, while the other, having tasted the water, refused to drink, although repeatedly brought to the trough, and this horse never was ill. Whatever the cause was, the effects showed themselves on the muscular and nervous system especially, although the symptoms were of the most different character. Up to this morning twenty horses have died, and several more are expected to die. All these horses were attacked at the same time, and not one case showed itself since the first day, which

puts an epidemic out of the question. The symptoms remind one very much of those, lately so much discussed, of strychnine. The absence of any visible cause of death in the dissected horses suggests the same idea. Every measure has been in the mean time taken to clear up this case, although the absence of the necessary means for a chymical analysis may render this rather difficult.—*From Correspondent of the Times*, Mar. 31.

AN AMERICAN QUERY TO ENGLISH HORSE-BREEDERS.

ASSUMING that the best horses for all harness service faster than a walk, and *weight-carrying* hunter chargers and hacks, should be short of full blood, which of the *distinct* English racers brought to America, and there crossed and mixed with "blood" (with blood we are provided) would be most likely to produce superior "half-bred" animals of the useful classes enumerated? In other words, what is the most desirable specific ingredient other than "blood" in the general lineage of the "half-bred" horse?

We think that the cross of blood, on the Midland-Black, Clydesdale, and Suffolk-Punch breeds, would be too violent and coarse; and that sufficient size could not be got through the ponies and cobs. The English racers we are inclined to prefer for mixing with blood, are either the *Cleveland-Bay*, by which we understand the coaching-horse of Yorkshire, or the *Trotting-Roadster* of Suffolk, Norfolk, and Yorkshire. We fear that the roadster may be rather cob-like, and not gentlemanly enough. But we await information from our transatlantic cousins—

MANY AMERICAN BREEDERS.

To the Editors of the *Veterinarian*.

Extracts from British and Foreign Journals.

THE ADULTERATION OF FOOD, DRUGS, &c.

WE promised in a previous number to give a condensation of the evidence adduced before the Committee of the House of Commons on this important subject, whenever they resumed their labours. We, however, find the thing has been so well done by the editor of the *Pharmaceutical Journal*, that we hesitate not to transfer it entire to our pages.

Mr. Scholefield's Committee having resumed the examination of witnesses, reports of the evidence have appeared in the newspapers. We think it unnecessary to publish a lengthened report of the statements of each witness, many of which are a repetition, with slight variations, of facts previously noticed, with occasionally a correction or contradiction, denoting either a difference of opinion among the witnesses as to the facts, or different modes of stating the case, according to the aspect from which it is viewed.

In the *Times* of March 3d, we find the following digest of the general tenor of the evidence :

"The witnesses before this Committee assure us that the tradesmen of London are playing pantomime in real life and in deadly earnest ; that we are the poor dupes, and that we have to pay for the sport which we give—to pay, not only with our money, but with our lives. For the worst of it is, that the articles we purchase are, they tell us, not merely diluted, they are adulterated—positively, abominably, poisonously. There is scarcely, they say, a single article of daily use which it is possible to procure genuine from ordinary shops. We ask for bread, and we receive a stone ; for coffee, and we receive chicory ; for chicory, and we receive burnt carrots and powder of dried horses' liver ; for oil of almonds, and we receive prussic acid, to heighten the enjoyment of the dessert by adding a little risk to it."

This summary of the nature of the evidence is followed by a few remarks, the truth of which admits of no denial, to the effect that a share of the responsibility rests with the public—the purchasers of the various articles prepared in obedience to their demand for that which is cheap.

"Throughout the country there is no greater curse than the rage for cheapness—the false ideas that most people have as to what is really cheap."

This, however, is not stated as any extenuation of the crime of adulteration, but as a mode of explaining the extent to which it is practised. The writer proceeds to observe:—

"Surely any one of respectability, sufficient to gain credence for his assertion, would make a fortune were he to set his face strenuously against all imposture, and determine to sell only genuine articles, even at a slightly enhanced price. So far from the enhanced price depriving him of custom, people would crowd to the shop, and might even be too ready to fall into a trap—the belief that the increased price is a sufficient guarantee for a better article. We continually pay at increased rates for the sake of far less advantage. What we want is to get the very thing we ask and pay for. Strange

that, with all the wealth of the world at our call, there are very few in this metropolis who can get a glass of pure water to drink, or a bit of genuine bread to eat!"

If this suggestion be put forward as an original idea, founded on the evidence before the Committee, it sufficiently demonstrates the fallacy to which that evidence leads, when literally translated into plain English. Experience has taught us, and experience equally taught our forefathers, that there is a definite relation between honest principle and success in business; that although we may occasionally meet with a lucky rogue, or an upright man who is unfortunate, yet these are exceptions to the general rule, handed down by our ancestors, in the old maxim, that "Honesty is the best policy."

There are honest men as well as rogues in every trade. There are also persons who, without the intention of acting dishonestly or the ability to detect imposition, fall into the snare laid for them by others, and buy what the market affords, according to the demand—which demand is regulated by the price their customers are willing to pay, and the kind of articles which are found to give satisfaction. This latter class of persons will be benefited by the disclosures which have been made before the Parliamentary Committee, for, although the evidence contains but little if anything that was not previously known by those who had paid attention to the subject, many of the facts elicited are new to the public at large, and will probably induce purchasers to be more careful and fastidious with regard to quality, and less unwilling to pay a fair price.

We subjoin a few extracts from the evidence in a condensed form:

FEB. 29.—*Dr. Alfred Taylor* commenced by alluding to the poisonous colours used in confectionery, such as Scheele's green, red lead, &c. The oil of bitter almonds and almond flavour he considered dangerous, and quoted several cases of accidental death from an over-dose. The prussic acid, although one of the constituents of the oil, might be separated from it without impairing its value for flavouring custards, &c. The word *poison* should otherwise be invariably printed on the label. Hair-dye containing oxide of lead had been known to produce partial paralysis by the absorption of the lead. *Dr. Taylor* confirmed generally the statements of other witnesses respecting the colour of anchovy sauce, pickles, &c. In the bread which he had examined, he had not found any appreciable quantity of alum. In small quantities alum would not be injurious, but it was a question whether the intro-

duction of this or any other substance into the system day after day might not be hurtful. He had examined unfermented bread, but had not detected anything injurious in it. The substance most likely to occur was arsenic, from the hydrochloric acid. Some of the gelatine sold to the public was unfit for human food, and had created a prejudice against the name, but the best kinds were as good as Russian isinglass, although the substitution of gelatine for isinglass, when the latter is asked for, would not be justifiable. Dr. Taylor gave a decided opinion as to the injurious effects of many quack medicines. He confirmed many of the statements of other witnesses with regard to coffee and some other articles of food, but thought there had been some exaggeration in the evidence published. He made a few suggestions of a practical nature, and thought the publicity given to the subject had already given a check to the practices. The desire to sell cheap articles in accordance with the demand, had been one of the principal incentives to adulteration.

Mr. James Abess, a wholesale grocer, considered the evidence of previous witnesses, respecting the adulteration of tea and coffee, had been much exaggerated. The mixture of chicory with coffee was preferred by the public, and sold without disguise as a mixture.

FEB. 29.—*Dr. Lewis* described the state of the law in France for the prevention of frauds and adulteration, by means of a board of scientific men, to whom reference could be made in cases of suspicion.

Professor Quecket confirmed some of the statements of other witnesses. He had once found brains in milk, but the usual adulteration was water.

Dr. Thomson had found the constituents of alum in seventy-eight samples of bread, but not in the form of alum. He thought it important to draw attention to this distinction, and did not consider the use of a small quantity of alum injurious, as it was decomposed in the process of baking; and the statement that crystals of alum had been found in bread, was fallacious. The addition of alum in any considerable quantity might be injurious, but he believed almost all the bread sold in London by bakers contained more or less alum. He had examined samples of beer, but had not usually found any adulteration. Coarse sugar was sometimes used, and he had once detected orange-peel, but had not found strychnia, cocculus indicus, or quassia. He suggested the propriety of extending the laws relating to the adulteration of bread and beer to other articles of food, and thought the appointment of a public prosecutor desirable.

MARCH 5.—*Mr. Lindsay Bligh*, analytical chemist to St. Mary's Hospital, had the duty of examining drugs for the hospital. Had not found drugs in their natural state adulterated, but sometimes of inferior quality. Preparations he had frequently found much adulterated; but since it had become known that they were subjected to analysis, the quality had much improved. He considered that adulteration, when practised, was done fraudulently, and not by accident. He had found drugs in Paris better than in England, which he attributed to the superior education of the French chemists, and the system of examination adopted. He thought some legislative enactment necessary.

Mr. W. Bastick was of opinion that adulteration was most extensively practised, either from fraud or imperfection in the manufacture. This was done abroad by the makers, and at home by wholesale druggists. Essential oils were generally adulterated with turpentine, or other oils; musk with sawdust and chopped horses' tails; white precipitate with corrosive sublimate and chalk; red precipitate with red lead; honey with flour and syrup. He also directed attention to the "compound powders," and gave a formula said to be adopted for a powder called "*gentian compositus*," containing only one seventh of gentian, from which he said any medical man would find his prescription produce a very different effect from that which he intended. He also gave a formula for turmeric powder. He thought the majority of the retail chemists could not detect the adulteration of drugs sold to them; at the same time there was no doubt many were able to do so, and sold adulterated articles knowing the fact. He was quite prepared to endorse the statements of Dr. Hassall and Dr. Normandy, and recommended legislative interference. He also read a recipe which had been published for making port wine.

Mr. Baiss, wholesale druggist, denied some of the allegations of former witnesses, such as the habitual mixture of sawdust with powders in the mill, and the sale of gentian compositus as genuine gentian powder. It was possible that such compounds might be obtained if ordered of the grinders, but no respectable wholesale druggist kept them in stock.

MARCH 7.—*Mr. W. Emmerson*, of Leeds, represented a company which had been formed for grinding flour on account of the extensive adulteration. The company had been very successful, and had greatly improved the quality of the flour and reduced the price. He thought legislative interference necessary.

Mr. Ferrand, book-keeper to a corn-mill society in Roch-
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dale, gave similar evidence of the success of that society, which had discontinued the use of alum with good effect. He also mentioned another society at Rochdale for the sale of articles of food generally, on account of the prevalence of adulteration.

Dr. Challis, of Bermondsey, had examined many samples of bread containing alum. Did not agree with those who think that alum is so changed in the process of baking as to be harmless. He considered it injurious to the stomach, and had found crystals of alum in bread. There was no necessity to use alum; a little more salt would answer the same purpose, without causing injury. Rice was also used in bread, which he considered a fraud. In the course of his practice he had seen evidence of the adulteration of beer by some intoxicating substance, the nature of which it was scarcely possible to detect by chemical process. He directed attention to the injurious effects resulting from the sale of diseased meat, and stated cases in which the adulteration of mustard had caused disappointment when used medicinally; which remark was also applicable to many drugs; and he thought powers might be given to vestries, under Sir Ben. Hall's Act, to interfere in cases of adulteration.

Mr. R. Usshur, a grower of English rhubarb at Banbury, having been accused by some former witnesses of selling a spurious article, inferior to foreign rhubarb, quoted *Dr. Pereira* in defence of English rhubarb, and stated that it was recommended by many medical men, and that the demand was increasing.

Mr. R. Gay, superintendent of the mustard department of her Majesty's Victualling Yard, Deptford, said, that on account of the universal adulteration of mustard, the government had lately undertaken the preparation of it. He had been a drug-grinder for thirty years prior to his present appointment. It had always been possible to obtain genuine mustard, but it was mixed to suit the public, as the genuine mustard became black by keeping, and the public did not like it. It was sometimes mixed with flour, ginger, and cayenne. In some government stores he had detected fifty per cent. of gypsum in the mustard before the present plan had been adopted. The mustard now supplied to the navy was pure. The presence of turmeric in mustard could be detected by spirit of ammonia giving a brown colour. While in the drug-grinding trade he had much experience in adulteration, being obliged to do it. Sometimes the sawdust and other things were sent to him to be mixed—in other cases he was ordered to supply them. Many of his customers dis-

liked the practice, but were obliged to do as others did, on account of the competition. The use of sawdust was universal in powders. He alluded chiefly to the neighbourhood of Leeds, where he had carried on the business, and could not positively state what was the practice in London.

MARCH 12.—*Dr. Neligan*, of Dublin, said he believed drugs were less adulterated in England than in Ireland. In Ireland no person except an apothecary could compound medicines. He thought the adulteration of drugs was chiefly between the wholesale druggist and drug-grinder. In reference to a recent case of accidental poisoning, he mentioned that the College of Physicians of Dublin had recently issued an order that dangerous medicines should be kept in angular or square bottles, and those of a harmless nature in round bottles. He did not think the adulteration of food was practised to any great extent in Ireland. Much injury was done by the unrestricted sale of quack medicines.

Mr. P. Ripley, a tea-broker, said the chief adulteration of tea in China was that of the "lie tea," the sale of which had risen from 100,000lbs. to 500,000lbs., but the demand having ceased, it was no longer sent to this country. He contradicted the statement that green tea was coloured with copper.

Mr. Weston, tea-broker, confirmed the statement of the last witness to the effect that the adulteration of tea is not practised to any great extent.

Mr. Locock, wholesale tea-dealer, gave similar evidence. He did not believe tea was adulterated by retailers, and it was generally sold in a very good state.

Mr. F. Grace Calvert, of Manchester, gave evidence on the adulteration of flour with potato-starch, rice, maize, and also with unsound and damaged flour. He noticed the adulteration of oatmeal, milk, &c. The guardians of poor-law unions encouraged such frauds by habitually taking the lowest tender. He gave many instances of the adulteration of drugs, and explained the state of the law in France on this subject.

Mr. R. J. Richardson, Inspector of Nuisances near Manchester, gave evidence as to the injurious effects of diseased meat, and the sale of such as was unfit for human food.

The Committee adjourned until Wednesday, April 2d.

Since the above was in type, we have observed another article on the subject in the *Times* of March 22d, written in the same strain as the former, and equally calculated to develop "the reign of terror" in the public mind. Here is a sweeping anathema on the public! for it must be remembered that the public is equally the criminal and the victim—each

person in turn is buyer and seller according to the nature of his business or his wants for the time being:

“There is not a single article representing the animal, vegetable, or mineral kingdoms, and used for the nutriment of man, for his apparel, for his necessities, his caprices, or his delight, which has not been publicly vended among us in an adulterated, damaged, or noxious state. Our meat has been diseased, and has induced carbuncles; our white fish has been green, and our green vegetables white; our sugar has been sand or lime; our wheaten bread potatoes and alum; our mustard has been flour; our beer has been drugged, and our drugs poisoned. The very air which we breathe and the water which we drink have partaken of the universal pollution. The rich, who are enabled by their position and their wealth to deal only with tradesmen of the highest class, have but little idea of the extent to which this adulteration has prevailed.”

If this be a correct literal version of the evidence, and the evidence a true statement of facts, it is wonderful that any person is left alive to tell the tale. But if it be the object of the remarks above quoted to bring the evidence and the labours of the Committee into ridicule, we have only to say that the subject is too serious and important to be dealt with in that way. The object of the Committee is to collect information, to elicit the truth, with a view of ascertaining what remedy can be found for abuses, the existence of which is not disputed. The evidence translated in the language of the *Times* is very far removed from the truth, calculated to mislead those who take it as sober earnest, and to disgust those who read it as a joke.—*Pharmaceutical Journal*.

RETRIBUTION.

A CURIOUS event occurred a few days ago in the University of Leipsic; Dr. Reclam, professor of legal medicine, was lecturing on nicotine, and to show the deadly effects of the poison he administered a large dose of it to a big dog. The animal, which was lying on its back, was immediately seized with convulsions, and ejected a considerable portion of the poison with great violence; it struck the professor in the face, and some of it entered his mouth. The doctor was immediately seized with all the symptoms of poisoning, but antidotes were promptly applied, and he was soon placed out of danger, but he suffered greatly, and had to be conveyed home.

THE VETERINARIAN, MAY 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE CONVERSAZIONE AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

The President of the above institution, W. Field, Esq. again invited the members of the profession and their friends to a *Conversazione* on the evening of the 26th March last.

The suite of rooms on the first floor, consisting of the council and Committee rooms, the library and the museum, were set apart for the reception of the company, who were received with courteous dignity by the President.

Among those who accepted the invitation, most of whom were present during the evening, were the following:—

Marquis Townshend, Viscount Raynham, Hon. A. F. Kinnaird, M.P., E. J. Hutchins, M.P., Major Lyon, Captain Fugion, R. E. Broughton, F.R.S., F. R. Pickersgill, A.R.A., F. H. R. Spratt, R.A., G. Lance, Thomas Landseer, G. C. Stanton, J. Thomas, B. T. Brandreth Gibbs, Fisher Hobbs, and I. J. Mechi, Esquires.

Reverends.—J. G. Briscoe, S. B. Harris, D. M'Anally, and P. Moody.

Physicians.—J. M. Appleton, B. G. Babington, F.R.S., A. W. Barclay, W. D. Chowne, — Cust, — Duncan, D. Fraser, H. W. Fuller, E. Lankester, F.R.S., R. Lee, F.R.S., J. O. M'William and Son, J. W. Ogle, — Oldfield, — Sanders, F. Sibson, F.R.S., J. Snow, R. D. Thompson, J. Webster, F.R.S., — Westmacott.

Surgeons and Friends.—J. E. Adlard, Jacob Bell, W. Bolton, R. Bowles, F. H. Bridgman, T. B. Brown, F. Buckland, J. Clinton, T. J. Clover, E. Cooke, F. de la Fosse, C. Eales, — Filleter, H. Foster, S. Garrard, P. Gowland, H. Gray, W. E. Greenwell, P. Hewitt, F. E. Hicks, T. H. Hills, J. Hogg,

J. Hutchings, D'Iffanger, J. James, W. Jones, A. Kennedy, S. A. Lane, J. J. Lupton, J. M'Evily, M. Marshall, P. Matthews, G. Moore, P. Meginiss, D. Oldfield, J. Part and Son, G. D. Pollock, J. R. Pope, R. Quain, F.R.S., F. Salmon, R. Sherriff, J. de C. Sowerby, P. Squire and Son, E. Thomas, W. Thomas, J. Toynbee, F.R.S., J. H. Tucker, H. B. Tuson, A. Ure, R. Utting, C. Varley, J. Wakem, G. F. White, R. Warrington, J. W. Wakem, W. R. Williams, Erasmus Wilson, F.R.S., J. Wood, and James Yearsley, Esquires.

Members of the Veterinary profession.—Professors Spooner, Simonds, Morton, Varnell, and Brown.

The Principal Veterinary Surgeon to the Army—J. Wilkinson, Esq.

The Senior Veterinary Surgeon to the Ordnance—W. Stockley, Esq.

Messrs. G. Austin, J. D. Barford, H. T. Batt, W. Barrow, E. Braby, J. Broad, L. Brockhurst, W. Burley, E. Charles, W. Cheesman, J. R. Cox, C. Dickens, W. Ernes, S. Evershed, J. Field, W. Field, R. Fletcher, E. N. Gabriel, Joseph Gamgee, John Gamgee, T. A. Gowing, J. B. Hall, R. Hempson, G. Hayes, W. Helmore, J. B. Henderson, H. W. Hooper, T. Jex, 1st Life Guards, J. Jones, E. King, F. King, J. H. Langworthy, J. Legrew, 2d Life Guards, H. Lepper, P. Lowe, C. Marshall, W. Megeniss, W. M'Kenna, J. Nice, A. Rogers, W. Robinson, A. J. Shorten, F. G. C. Shaw, F. R. Silvester, J. Smith, G. South, S. Sparrow, H. R. Stevens, S. Tremlett, C. Wallis, J. Wattam, F. G. Webb, S. H. Withers, Joseph Woodger, E. Woodger, and the officers of the Veterinary Medical Association.

On the walls were hung some of the finest paintings of Sir Edwin Landseer, from the collection of Mr. Jacob Bell, consisting of the "Shoeing of the Horse," "Diogenes in his Tub," and a "Blood-hound." Likewise a reduced copy by Mademoiselle Rosa Bonheur, of her celebrated picture of "The Horse Fair;" painted, as we were informed, for Mr. J. Bell. Also an exquisite painting of a "Ewe and twin Lambs," by Voelkerboken, with magnificent fruit pieces, both in oil and water colours, by Mr. G. Lance, and designs for objects of

art to be worked in the nobler metals by Mr. G. C. Stanton. On the mantel-pieces, and on brackets, were placed a medallion portrait in marble by the last-named artist, and busts and statuettes in ivory and alabaster by Mr. B. Cheverton. The useful process of rendering soft stone hard, and making it resemble marble, according to Barrett's process, was likewise exhibited by Mr. J. Part, jun.

On the tables were placed many of the rarer chemicals, by Mr. Squires and Mr. Bolton; specimens from the Royal Botanic Society, and Royal Veterinary College; an admirable collection of models, in wax, of morbid parts and diseases of the skin, by Mr. H. B. Tuson; the different purgative agents used for the horse, by Mr. J. Field; the drugs employed by the native horse-doctors of the north-west provinces of India and the Punjaub, by Mr. F. G. C. Shaw; and specimens showing the manufacture of alum and soda, by Mr. C. Stephenson. Microscopes, exhibiting living and other objects of professional interest, were brought by Messrs. Simonds, Varley, and Gamgee, and a stand, with stereoscopes, was furnished by Mr. W. E. Kilburn; while anatomical and botanical drawings were freely distributed over the rooms. The ground-floor was appropriated to refreshments, which, as before, were on the most liberal scale, and supplied by the Messrs. Gunter.

The meeting was certainly all that could be desired. After the customary introductions, much animated conversation took place on the different articles so kindly lent for the occasion, accompanied with the interchange, between the members of the two professions, of the most friendly sentiments towards each other, and of the advantages that would be derived from these *réunions* more frequently taking place.

If the objects this year were fewer in number than those of last year, there was one feature in the arrangement made by the Committee—who were anxious to avoid repetition—valuable for its instructiveness. We allude to the exhibition of series of different substances. Thus specimens were exhibited of the edible horse-radish (*Cochlearia armoracia*), the white briony root (*Bryonia alba*), and the root of the aconite (*Aconitum*

napellus), which has recently proved so poisonous, in juxtaposition. The aluminous clay, from Whitby and Paisley, was associated with its product, alum; and the cryolite, from Greenland, with the so designated new metal, aluminium, in cylinder or bar, wire, and foil. The above-named mineral is now the source whence this metal is most easily obtained. The formation of carbonate of soda from common salt, by the aid of sulphuric acid, and the subsequent burning of the sulphate thus formed with carbonaceous matters, was illustrated by the specimens already adverted to. The nut of the strychnos was placed with its alkaloid strychnine; and the wounded capsules of the poppy, and the instrument used for making the incisions, so as to allow of the escape of the juice, with the product, opium.

The like arrangements also obtained among many of the morbid specimens. Thus the various calculi concretions were placed in the order of their classification. Mr. Henderson having sent the model of a diseased spleen, an account of which is inserted in the present number of our Journal, other models were supplied from the Museum of the Royal Veterinary College, and it was the same with many other. And yet, for all this, on looking over the above list of names, we cannot help being struck with the comparative fewness in number of the members of our own profession that were present. Surely they ought to have constituted by far the majority, whereas they were the minority. Why is this? On a similar occasion last year, above five hundred invitation cards were sent out, and the number returned was astonishingly large, arising from change of residence, deaths, and other causes. This year the President generously gave an invitation to the whole of the profession. It was only to "ask and to have;" and the adage is, "that which is not worth asking for is not worth having;" nevertheless this plan was not more successful than the other.

It was, however, very gratifying to see some there who had come from long distances, and one of our number, Mr. McKenna, thought it worth his while to come from Ireland for this especial purpose. Such zeal is worthy of commendation.

Would there were more of this amongst us, then should we have no apprehension as to the ultimate standing and estimation of our profession. We write in no censorious spirit—it does not become us—but we profess to have an earnest desire to see the profession advance, and to take and maintain its proper position in the scientific world; and we are sure this can never be done without co-operation, unity of purpose, and determination on the part of its members. Laxity and indifference among ourselves will beget the like feelings in others; and until we show to the public that we are really a united body, they will not place confidence in us, nor estimate us according to our worth. Many may, perhaps, plead exemption on the grounds of distance and full occupancy of their time. Still, when it is borne in mind that railroads have nearly “annihilated time and space,” and that these *réunions* take place only once a year, surely an effort might be made to remove the seeming difficulty. Extraordinary occasions demand extraordinary efforts. We could, however, name some for whom these excuses would not avail, fortune having favoured them, and being able, through the exercise of their talents, to retire from the duties of the profession and its cares, and living not far off, it would have been very gratifying to have seen them with us on this occasion. If another opportunity of the kind should offer itself, we hope our friends will take the hint, accepting it in the spirit it is meant. We ought to remember that it is for our especial delectation and profit that these associations are brought about, and the expense and labour attendant on getting them up—not to say a word about the anxiety therewith connected, lest all should not be in accordance with the expectations of the invited—are great; yet the one is most liberally met by the President, and the other as cheerfully performed by the Committee; but both necessarily feel disappointed if so be those for whom the meeting has been arranged do not come to it.

What if royalty were not with us, as was anticipated, there was that present which royalty merely cannot impart—the products of industry and talent, and the results of the applica-

tion of thought and inquiry, emanating from minds actuated by a love of research, ennobled by being free and unrestrained, and strong with the conviction that it is only by a free interchange of ideas among those who follow kindred professions, that science can hope to progress, or make any real advancement for the general good,—the object and the end of all scientific pursuits.

There is yet another point connected with these meetings, which we are desirous of commenting on, but want of space prevents our doing so now ; we will, therefore, reserve it for some other opportunity.

ALTHOUGH not written for the press, we have ventured to insert in the present number the communication received by us from Mr. F. de Fair Elkes. We have done so from an impression that our readers would like to be made acquainted with some of the diseases prevalent in the Crimea, and also the difficulties, or otherwise, their professional brethren have had to contend with at the seat of the late war. Further, we believe that the profession will derive great and lasting advantages from the opportunities that have been offered to the rising members of our body, by the numerous appointments recently made in the army, arising from the new field of inquiry and investigation thus opened up to them. We are so well acquainted with the writer, that we are under no apprehension whatever of his being displeased with us for giving publicity to that which, we repeat, was not written by him for the public eye ; and it was only the conviction that the subject-matter was interesting to the profession, beyond what we have already said, that has induced us to do it. This explanation will suffice to account for the seeming disconnection of some of the statements he has made ; there being, of necessity, much left out that was of a private and friendly nature.

Of the ready adaptation of a means to an end, necessity being often the parent of discovery, we have only to refer to Mr. Elkes's employment of horse-radish as a stomachic. Its general properties we are all familiar with, but more, perhaps,

as a condiment than as a medicinal agent; nevertheless, it is a powerful general stimulant, and said also to act as a diuretic and diaphoretic. It has been analysed by Gutret, and found to contain, "*an acrid volatile oil, bitter resin, extractive, sugar, gum, starch, woody fibre, vegetable albumen, acetic acid, and acetate and sulphate of lime.*" On the first three principles its activity depends; and as the plant is indigenous to this country, and also cultivated very largely, there is no reason why it may not be employed by us medicinally.

That an epizootic has been singularly destructive of cattle in the Crimea, is proved from a statement made by the special correspondent of the *Times*, who says that, "The French Intendance and our Commissariat have had to contend with very serious obstacles, and among them there was none greater than the mortality among the cattle purchased by their agents, which in some instances has utterly ruined contractors 'for delivery.' In nine months the French lost 8,000 bullocks out of 17,500, at Samsoun alone, and we lost at the same place 4,000 out of 10,000 bullocks. But even those who survive do not get very fair treatment on their way to the Crimea. It is horribly true that the unfortunate animals are sometimes hoisted up into the ships and out of them again *by their horns*, and that some of them in calf have been hoisted out by means of *slings of rope under the belly*, and have died in agony on the wharf. The losses in this way, and by the way in which the animals are beaten and crowded together and fed, are disgraceful in every sense, and revolting to humanity. In some of the ships there are no troughs of water provided for them. Our cruelty recoils on ourselves, for they die of exhaustion and thirst, or are reduced to skin and bone. There is no care taken to feed them in others of those ships, except by throwing wads of hay into the hold. One vessel with a cargo of 100 cattle and 800 sheep, from Baltschick, landed only 63 cattle and 200 sheep at Balaklava; but it is quite evident that if we made it the contractor's business to take care of the animals by only making an agreement for delivery alive, we should save money and avert much suffering. That it can be done we have proof,

for the Sardinians form their contracts on that base as a general rule, and a contractor who sent them 300 sheep from Guemlek, took such care to keep them alive, by putting turnips, mangoldwurzel, and water on board, that he brought every one of them, with two exceptions, in good condition to Balaklava."

Mr. W. T. Mayer, P.V.S.T.C., writing to us from Kertch, states, "Before I came up here, I had 400 bullocks attacked with the epizootic, which is now spreading over the whole of Turkey, and at some future time I will give the profession an account of this formidable disease." This we are pleased to hear.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, APRIL 2, 1856.

PRESENT:—The President; Messrs. Braby, Ernes, Jones, Peech, Robinson, Silvester, Wilkinson, and Withers; Professors Spooner and Morton, and the Secretary.

W. FIELD, Esq., the President, in the Chair.

The minutes of the previous meeting were read and confirmed.

Letters were read from Mr. Jones, thanking the Council for his election as a member thereof; from Mr. H. Hallen, resigning his office as vice-president, which, on the question being put from the chair, was accepted; and from Mr. W. Stockley, excusing himself from attendance at the meeting.

The *Secretary* announced several donations to the Museum, from Messrs. J. Turner, J. R. Cox, J. Brown, W. Robinson, and J. Wattam.

On the motion of *Mr. Wilkinson* seconded by *Mr. Silvester*, the thanks of the Council were voted to those gentlemen.

On the motion of *Professor Spooner*, seconded by *Mr. Silvester*, a committee was appointed, consisting of Messrs. Ernes and Braby and the Secretary, to prepare the annual abstract of proceedings to be submitted to the Annual Meeting, in May.

On the motion of *Mr. Robinson*, seconded by *Mr. Ernes*, Mr. Austin and Mr. Charles were appointed Auditors for the ensuing year.

The *Secretary* said the next business concerned the completion of the Board of Examiners for Scotland. At present, there were only four members instead of ten, Dr. Easton, Messrs. Williamson, Robb, and Cowie; and, as it was probable, that the board would soon be called upon to act, it was desirable that the vacancies should be filled up. In reply to Mr. Wilkinson, the *Secretary* stated that the four gentlemen at present on the board were willing to continue their services. The following names had been handed to him: Professor Miller, suggested by Mr. Cowie; Drs. Dunsmuir and Moir, and Mr. Wishart, suggested by Mr. Williamson. He would suggest that those gentlemen should, at the next meeting of the Council, be elected as members of the board; which would then be complete, with one exception.

The *Secretary* drew attention to a paragraph that had lately appeared in the *Times*, stating that the Highland and Agricultural Society had passed a resolution at their recent meeting, to apply to government for a Supplementary Charter to establish a School of Education.

Mr. Ernes suggested the appointment of a Committee to consider the bearing of the subject on the Charter of the College.

After some conversation on the subject—

Professor Spooner suggested that a Committee should be appointed for general purposes, its duties not being confined to the question mentioned by the *Secretary*.

On the motion of *Professor Spooner*, seconded by *Mr. Ernes*, a Committee for General Purposes was appointed, consisting of Messrs. Ernes, Field, Jones, Robinson, Silvester, Spooner, and the *Secretary*.

The *Treasurer* then read his Annual Report, which showed a balance in favour of the College of £68 10s. 10d., in addition to the sum of £250 placed as a "deposit," bearing interest, at the bankers.

Mr. Ernes moved the reception of the report.

Mr. Silvester seconded the motion, which was passed unanimously.

Mr. Withers, pursuant to notice, proposed that £20 should be added to the allowance of the *Secretary*, whose duties, he said, were very onerous, and such as fully entitled him to the additional remuneration.

Messrs. Braby, Wilkinson, and Silvester, spoke in favour of the motion, and *Professor Spooner* proposed, as an amendment, that the additional sum be given as a bonus, the allowance having been previously fixed. This was seconded by *Mr. Robinson*, and was agreed to *nem. con.*

The *President* announced the resignation by Mr. Mayer of his office, as a member of the Board of Examiners.

On the motion of *Professor Spooner*, seconded by *Mr. Robinson*, Mr. Mayer's resignation was accepted.

Mr. Wilkinson asked if it would be legal for any gentleman not a member of the examining board to assist at the examinations, adding that it would be very desirable to have the assistance of the Chairman.

The *President* said there was a law which prevented all persons except Examiners from interfering.

The proceedings then terminated.

SPECIAL MEETING OF COUNCIL, APRIL 16, 1856.

PRESENT: — The President, Messrs. Braby, Cheeseman, Cherry, Dickens, Ernes, Jones, Legrew, Robinson, Silvester, Stockley, Wilkinson, Withers; Professors Spooner, Simonds, Morton, and Varnell, and the Secretary.

W. FIELD, Esq., President, in the Chair.

The Annual Report, or abstract of proceedings of the Council, and the balance-sheet having been read, a slight alteration in the former was, on the suggestion of Professor Spooner, made, and on the question being put from the chair, it was declared to be received and adopted.

The next business was the election of a member of the Board of Examiners in the place of Mr. Walton Mayer resigned; when Mr. Henry Lepper, of Aylesbury, was proposed by Professor Spooner, and Mr. Pritchard, of Wolverhampton, by Mr. Cherry, and on the ballot being taken, Mr. Lepper was declared duly elected.

A ballot was then taken for filling the vacancies in the portion of the Board acting for Scotland, when the gentlemen proposed at the last meeting, viz., Professor Miller, Drs. Dunsmuir and Moir, and Mr. Wishart, with the addition of Mr. Cockburn, were declared elected, and the Board of Examiners to be complete.

It was decided, on the motion of Mr. Ernes, seconded by Mr. Cherry, that a list of members of the Council be printed, marking those retiring by rotation, with a notice that all candidates must be proposed before being balloted for.

Messrs. Jones, Withers, and the Secretary were named as the Committee of Supervision of this and the preceding meeting, and the proceedings terminated.

JOHN JONES,
SAMUEL H. WITHERS,
E. N. GABRIEL.

MISCELLANEA.

PAPER CONTAINING ARSENIC.

IN these days, when the toxicologist is so frequently puzzled to know how the poison which his skill has detected has got into the organism, it may be not unimportant to know that a great quantity of the blotting-paper, which is frequently used for filtering, contains arsenic in considerable quantity. Vohl has found, in a grey kind of blotting-paper, upon an average, one grain of arsenic, five sixths of a grain of oxide of copper, and one grain and a quarter of oxide of lead per sheet. He attributes the presence of these poisonous substances to the employment, in the manufacture of this kind of paper, of old carpet which had been dyed with Schweinfurt green, &c.—*Reports of the Progress of Chemistry, by W. Bastick, Esq., in the 'Lancet.'*

OBITUARY.

Died, at Scutari, on the 7th March, Alfred H. Cherry, Esq., æt. 32, Veterinary Surgeon 1st Royal Dragoons, youngest son of the late Frederick C. Cherry, Esq., Principal Veterinary Surgeon to the Army.

Mr. Cherry entered early in life as a student at the Borough hospitals, where he availed himself of the advantages these noble institutions afford for acquiring medical knowledge. In 1843, he proceeded to Edinburgh to study the Veterinary Art under Professor Dick, where he quickly obtained his diploma. He returned to London to finish his medical education at St. Thomas's, where he dressed under Mr. Green, with a view to becoming a member of the Royal College of Surgeons. A commission, however, awaited him as veterinary surgeon to Her Majesty's 16th regiment of Lancers, and in September, 1846, he joined the quarters of his regiment at Canterbury. He served for several years in Ireland,

and in June, 1854, he was appointed one of the commission under the command of Colonel Kinloch to proceed to Spain, to purchase mules for the service of the army in the Crimea. During his travels, the previous medical knowledge he had obtained, rendered him eminently serviceable to the officers and men employed on this duty, who were more or less attacked with illness; besides propitiating the jealous and bigoted Spaniards, by rendering to them medical aid, and thus materially advancing the object of the commission. On his arrival at Valencia the cholera was raging with intensity, and many of the Spanish doctors had fled from the pestilence; those that remained, with whom he came into contact, were administering to their patients most ridiculous remedies, principally Syrup of Saffron and inert confections. He promptly adopted the English methods of treatment with the most marked success, by saving many.

From this port he embarked with the last detachment of mules for the Crimea. His services in this duty elicited the most marked approval from the late Lord Raglan, as well as from the home authorities. He remained in the Crimea as Staff Veterinary Surgeon, until, suffering from acute rheumatism brought on by exposure and fatigue, he was invalided by a medical board, and sent home to recruit his shattered health.

Having partially recovered, he applied to be sent out again, and exchanged to the 1st Royal Dragoons, with which regiment he did duty until attacked with fever at the winter quarters of the cavalry at Scutari. Here he met with Mrs. Roberts, the well-known "Sister George," late of St. Thomas's. This excellent and clever woman, after superintending the accident ward at St. Thomas's for many years, retired on a pension, but when the tale of misery came home that our brave army was melting away before "disease, incompetence, and neglect," and Miss Nightingale flew to the rescue, "Sister George" volunteered her services, and at once became this lady's most valuable assistant. She received the young soldier in the hospital, and nursed him with even a mother's care. She closed his eyes in death, and had the melancholy satisfaction of rendering to him those kind services he had so often administered to others.

H. B. E.

[The above was received by us too late for insertion in the last number.—Editors.]

THE
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Communications and Cases.

THE REPORT OF THE EPIZOOTIC COMMITTEE
OF THE EPIDEMIOLOGICAL SOCIETY.

ON PLEURO-PNEUMONIA AMONG CATTLE.

To the Editors of the 'Veterinarian.'

GENTLEMEN,—I beg to acquaint you and your readers, that, on the 7th of April, the Report of the Epizootic Committee of the Epidemiological Society, of which Professor Simonds was appointed Chairman, was read before the Society by Dr. M^cWilliam, as drawn up by Mr. Gabriel, Honorary Secretary to the Committee, from several hundred replies, received from gentlemen to whom the queries were sent in relation to pleuro-pneumonia among cattle. The report appeared to afford great satisfaction to the medical members present, one of whom, and who was not aware that the Epidemiological Society was co-operating with members of the veterinary profession, as regarded epizootics in the lower animals, said, that it afforded him very great satisfaction to find that such was the case, as he believed it would ultimately tend to throw great light upon epidemics affecting man, and epizootics the brute creation; and he felt assured that a mutual advantage would be derived from such laudable co-operation.

The report alluded to will appear in the Transactions of the Epidemiological Society, to be published in the Journal of Public Health, for July, 1856, where your readers will have an opportunity of perusing the document in detail.

In the *Veterinarian* for September, 1851, will be found an article from the pen of its late editor, Mr. Percival, who for two years was a member of the council of the Epidemiological Society, by whom he was highly respected, and by whom his departure from life was sincerely deplored. As some of your

readers may not have an opportunity of referring to the article to which I desire to direct attention, and as it was deemed worthy of being reprinted for distribution among the members of the Epidemiological Society and others, I trust that you may consider it also worthy of a reprint in an early number of the *Veterinarian*.

Nearly five years have elapsed since its first publication took place; some who read it then, and have thought of it, might have supposed that the epizootic committee therein alluded to had ceased to exist.

The reprint would enable those who cannot avail themselves of the number of the *Veterinarian* in which the article appears, to note with what warmth the late Mr. Percival treated the prospect of co-operation of the members of the medical profession, with that of the sister science, the veterinary.

I have the honour to be, Gentlemen,

Your obedient servant,

J. H. TUCKER.

38, BERNERS STREET; *May* 14, 1846.

[We have much pleasure in complying with the request contained in the foregoing communication, and reprint the article in question.]

"THE EPIDEMIOLOGICAL SOCIETY was first introduced to the readers of the *Veterinarian* so long ago as August, 1850. In our journal for that month, its origin and pretensions are set forth in a letter forwarded to us by its then *pro tem.*, but now one of its honorary secretaries, Mr. Tucker, of Berners Street, Oxford Street. In the December following, the society, in the interval formed and organized, held its first meeting; on which occasion its distinguished president, Dr. Babington, delivered an address, characterised no less by the historical learning displayed in it on the rise and spread of epidemic disease in general, than by the interest it at the time excited, from containing some curious and valuable facts in respect to endemics in particular. In this eloquent address—an abstract of which will be found in our number for January of the present year, 1851—Dr. Babington sets forth 'the objects of the society' to be, 'to endeavour, by the light of modern science, to review all those causes which result in the manifestation and spread of epidemic diseases—to discover the causes at present unknown, and investigate those which are ill understood—to collect together facts on which scientific researches may be securely based—to remove errors which impede their progress—and

thus, as far as we are able, having made ourselves thoroughly acquainted with the strongholds of our enemies and their modes of attack, to suggest those means by which their invasion may either be prevented, or if, in spite of our experience, they have broken in upon us, to seek how they may be most effectually combated and expelled.' In accordance with this *coup d'œil* of the 'objects' of the society it is that its members have been carrying on their operations. The field of research before them is an ample and a fertile one, necessarily divided off into parcels and portions, in the allotment of which, as will appear from the following extract out of the society's 'address,' the veterinary public will find they have not been overlooked.

"In order to throw some light upon the whole question of epidemic disease, and as an object in itself of important inquiry, it will be within the scope of the society to investigate *the diseases prevailing extensively among domesticated and other animals*, as well as those that affect the vegetable kingdom.'

"In furtherance of this their object, and which most nearly concerns us, it is with feelings of pleasure we now find ourselves in a situation to announce the recent formation, by the Council of the Society, of an epizootic committee. To this result we have for some time past been confidently looking forward, and with more than ordinary interest; resting assured, as we all along have done, that, as soon as practicable, the inviting prospect presented to us in the above-quoted paragraph of the address would be brought closer under our view, and submitted to deliberate examination.

"In the Address we have all read and admired, we find the highly talented and esteemed President of the Epidemiological Society to have stated, that the medical professions of all nations have yet much to learn regarding the causes, the means of prevention, and the treatment of several of the most formidable of the epidemics which, from age to age, and season to season, have attacked the human race, and wherein we find ourselves invited to co-operate in the working out of so important and desirable an end, shall we of the veterinary profession stand by as silent and actionless spectators? Shall we not rather buckle on our armour and rush into the contest, prepared to afford any and every auxiliary in our power in the furtherance of so noble a cause? Nay! have we not epidemics, *alias* epizootics, among our own patients to care for? And is it not our bounden duty to learn to understand their nature better, and so the better be able to cure them, for it is very well known we

do or can do but little at the present day? The spring which has just passed, and the summer which is now passing, can both vouch for this in the two influenzæ that have been prevailing so alarmingly and extensively among our horses; while the pleuro-pneumonia of former years is ready to be adduced as an equally potent incentive to our exertions on the part of cattle.

“While the veterinary public may with some confidence calculate on beneficial results from the labours, now about to commence, of the epizootic committee, the committee itself may reasonably look forward to essential services being rendered it by the learned Council of the Society, as well as out of arrangements which the Council have been enabled to make, through the nomination of foreign secretaries, with countries abroad.

“The hand held out by the professors of the sister science in this spirit of liberality and friendship, in furtherance of objects of vital import to both professions, will be seized by the veterinary surgeon with cordiality and pride, and by him be hailed in token of a bond which, uniting two professions engaged in common in promoting the healing art, can never suffer division or disseverment without detriment to one or both of the bodies it holds in union. Comparative anatomy and physiology and pathology cast their lights forward and backward from object to object in such manner, as through reciprocity of illumination, to cause the objects themselves to shine forth with redoubled brightness, while standing, as they do, in relation to one another, in a field in which the sciences enjoy so wide and unrestricted a range.

“The epizootic committee held their first meeting at the residence of Mr. Tucker, on Tuesday, the 19th August: Professor Simonds, being appointed its permanent chairman. The list of members, as yet imperfect, we hope to be able to give in our next Number, and at the same time to have it in our power to annex some account of the proceedings of the Committee. We need hardly add, from the interest which it must be plain to all we take in this matter, looking upon it, as we do, as one of vast consequence to us in our professional intercourse with the animal kingdom, that the pages of the *Veterinarian* will at all times be open to, and ourselves be happy to receive, the accounts of the proceedings of the epizootic department of the Epidemiological Society. And further, we do hope and trust, for the honour and benefit of veterinary science, that the members of our profession will, on this occasion, one and all, put their best foot foremost in administering to the culture of a branch of medical science

having for its special object the overshadowing and stifling of 'invisible foes' no less 'to the human race' than to brute kind at large."

CASES OF FRACTURE OF THE PELVIS.

By JAS. WESTERN, M.R.C.V.S., Horse Artillery, Bangalore.

CASE 1.—On the 19th June, 1854, I was called to visit a patient in hospital, at half-past 7 p.m., reported to have violent colic.

The farrier-major's history was, that the horse had been brought from his lines about a quarter of an hour before, and that the attack was so violent, that he threw himself down at his picket, and lamed himself by the fall, as he came limping to the hospital with the off hind leg, and that directly he got into the stable he lay down. He also said that he had given him a draught composed of Spt. Ether. Nit. et Tr. Opii, as an antispasmodic.

I found my patient, a black New South Wales gelding, of the C troop, lying stretched out on his off side, breathing rapidly, and now and then raising his head and looking anxiously to his flank. The pulse was imperceptible, the extremities cold, and the entire surface of the body covered with the clammy sweat of death.

There could be no doubt that internal hemorrhage existed, and that death was close at hand. I knew the horse to be a remarkably timid animal at his picket, frequently running back upon and breaking either his head rope or tearing up his picket-peg; I, therefore, suspected at once that he had thrown himself down in the usual manner, and possibly ruptured the liver. The lameness reported to me I thought might depend on a severe contusion of the limb. He died a very few minutes after my arrival, but was not examined till next morning.

I found the abdomen was nearly filled with clotted blood, and that the pelvis was fractured, in a direct line with the symphysis pubis, at about an inch from it on the right side. A second fracture ran upwards into the hip-joint. The bladder was torn to shreds by the broken bones. He had walked between two and three hundred yards from his picket to the hospital with these extensive fractures.

CASE 2.—In July, 1855, His Excellency the Commander-

in-Chief, passed through Bangalore to the Neilgherry Hills, and left his stud in charge of Captain Beresford, A.D.C. to General Beresford, commanding the division. I was hastily sent for by Captain Beresford to see one of the Commander-in-Chief's horses, which he stated in his note to be very ill with colic. On reaching the stable, in about twenty minutes afterwards, I found the horse at the point of death, indeed he died within five minutes of my arrival. He had been sent to a farrier in the neighbourhood to be shod; and as something alarmed him while this was going on, he snatched his foot from the farrier, and ran back to the full length of his heel rope, by which means, being suddenly checked, he fell backwards with great violence. On rising, he showed such signs of violent pain that the farrier walked him home to his own stable (about two hundred yards) where he lay down immediately, exhibiting great pain. The fracture was very similar to the former, and the abdomen deluged in blood.

TETANUS IN A MULE, SUCCESSFULLY TREATED BY CANNABIS INDICUS.

By H. LEPPER, M.R.C.V.S., Aylesbury.

I AM desirous of reporting, in your widely circulated and valuable Journal, a successful issue, in a case of tetanus occurring in a mule, from the exhibition of the cannabis indicus; and the more particularly so, in consequence of its being a new therapeutic agent in the practice of veterinary medicine in this country, although we have heard of its remarkably good effects as an anæsthetic in India. I am also in hope that some of my professional brethren may be induced to give this agent a trial, with a view to our better understanding its medicinal effects.

My patient was a female, six years old, the property of Mr. William Fisher of this town, and in excellent condition. She was a very irritable animal, and above the ordinary size of those bred in this country. My attention was called to the case on the 12th of February last, when I found all the symptoms present which are common in these formidable neuralgic affections. The ears were rigid and pointing forwards; the tail partially extended; legs stiff, and affording an unsteady support in progression. The membrana nictitans was likewise forced over a large portion of each eyeball, more especially on our attempting to raise the head; the

bowels were constipated, and the pulse considerably increased. In a word, it was an aggravated form of tetanus I had to deal with, but without trismus being fully completed, as the jaws were moveable to the extent of about an inch and a half, which enabled the animal to take a bran mash, and also afforded me the opportunity of giving a ball with the instrument usually employed for such purposes. I first had my patient removed from an open shed, where she had been standing in rather an exposed situation, into a comfortable and quiet stable, and my investigations were then directed to discover, if possible, the cause of the malady, but I was unable to do so, and, consequently, it must be considered as idiopathic in its origin.

The treatment was commenced by giving—

Cathar. Mass., ʒvj et Pulv. Cannabis Indicus, ʒij,

night and morning, until the bowels were rather freely acted upon, which took place on the morning of the 15th. Up to this time she appeared to get rather worse; and as the administration of the medicine in the form of a ball produced additional paroxysms, I now commenced giving

Cannabis Indicus et Sacch. Purif., āā ʒij,

in the form of a powder, mixed with her mashes, of which she took freely.

This treatment was continued twice a day until the 3d of March, when my store of the hemp was exhausted. The improvement from the 15th of February, the third day from the attack, was slow but still daily perceptible; and, on the 5th of April, I gave directions for her to go to her accustomed labour, all appearances of the disease having passed away for some time.

I believe that the resinous gum, or an extract of the plant, is more to be depended on than the simple powder; *vide* Mr. Fulton's excellent description of the Cannabis, published in the *Veterinarian* for October, 1855; but there is an advantage in exhibiting it in the form of a powder, as when taken with the food, the excitement, and therefore the additional suffering to the animal, consequent on the giving of a ball, is in these cases avoided.

I must confess, however, to be very sceptical of the benefit of any known medicine in tetanus, having seen cases recover from totally opposite treatment, and several without any treatment worthy of notice being adopted, so that I am anxiously seeking for some new agent deserving of more confidence than any in our list of anæsthetics or antispasmodics.

PARTIAL OCCLUSION OF THE URETHRA IN AN OX.

By the Same.

I SEND for your inspection a diseased bladder and penis of an ox, which possess some points of interest. The history of the case is, however, rather brief. The animal was of the pure short-horn breed, about two years and a half old, and was originally intended for stock purposes; but when about eighteen months of age, although seemingly in perfect health, he was noticed to have a great disinclination to perform his duties as a bull, and was consequently castrated. After this period, nothing particular was observed with reference to any defect in the urino-generative organs save a little difficulty in urinating, until about the 5th of the present month, April, when the penis was noticed to be protruding from the prepuce, and to be somewhat swollen. On the 14th, my attendance was required, as the animal was now very unwell. The leading symptoms were great abdominal pain, manifested chiefly by his attempting to strike the belly with the hind legs, turning the head to the side, and pointing the nose to the flank, with a great disinclination to stand; the sufferings being much aggravated when he was made to do so.

The penis was also protruded to the extent of four or five inches, and was much swollen. There were beside repeated but ineffectual efforts to micturate. With a view of relieving the bladder of the accumulated urine, I attempted to pass a small catheter into the urethral canal, but could not discover any opening. Supposing that the closure of the passage depended principally upon the general tumefaction of the penis, I determined to remove a portion of the glans, and excised about two inches of the organ, but met with no better success in discovering a passage large enough to admit the catheter. On examining the bladder *per rectum*, I found it greatly distended, almost to bursting; and consequently I at once cut down upon the urethra, as in a case of lithotomy, but found myself in as great a difficulty as before, being even now unable to pass an instrument into the bladder from the partial closure of the canal with adventitious membranes. As the case appeared to be a hopeless one, I gave directions for the poor beast to be slaughtered, which was accordingly done.

[We regard this as a very interesting and unusual case. Instances of chronic thickening of the body of the penis,

accompanied with an inability of unsheathing the organ and a difficulty in urinating, have not unfrequently come under our notice ; but these have generally succeeded upon an injury which has been produced in the act of coition by the penis forcibly striking against the tuberosities of the ischium. No such cause appears in the history of this case : the disease, however, had evidently been going on for some time, and became somewhat suddenly aggravated. The penis throughout its entire length was considerably increased in size from inflammatory action ; and just above the part excised by Mr. Lepper, the urethra was found to be dilated into a pouch-like cavity, and to contain a large quantity of calcareous matter, which completely blocked up the passage. Superior to this point, and throughout the whole course of the canal, much inflammation, accompanied with considerable thickening of the mucous coat, existed, and adventitious membranes and purulent collections were likewise met with. In several other places also, and particularly where the false membranes were found, earthy matter was deposited. Was it that this peculiar condition of the canal was caused by the continual passage through it of urine charged with earthy salts, thus giving rise to irritation, subsequent inflammation, and partial obliteration ?

The coats of the bladder were much thickened, and its mucous membrane was eroded here and there, being likewise covered in patches with layers of effused lymph. The vessels of this membrane had, some short time previous to death, given way, leading to the escape into the bladder of upwards of six pounds of pure blood, which we found in a coagulated state. This condition of the bladder had evidently increased the animal's sufferings, by inducing in part those painful efforts to micturate which marked the progress of the case during the latter period of his life.]

SUCCESSFUL OPERATION FOR VENTRAL HERNIA.

By R. H. DYER, M.R.C.V.S., Waterford.

I BELIEVE it has often been said, that to speak with certainty of the success of an operation, it is at all times necessary to produce a large number of cases. Ventral hernia has frequently been commented upon in your pages, and in almost every case an operation for its reduction has proved successful.

Having recently contrived to "pull through" a case, I hasten to give it you.

A bay filly, two years old, the property of Wellesley Prendergast, Esq., residing at Listerlin, in the county of Wexford, some time since received an injury on the side of the abdomen, about six inches in front of the patella, and close to the cartilages of the hindermost ribs, by which a laceration of the muscles was produced, leading to hernia of the intestines. She was placed under the care of a veterinary surgeon, who was prompted to apply a sticking plaster to the hernial swelling, for the purpose of reducing it. After the lapse of fourteen days he wrote to the owner of the animal, stating that the case was incurable, and that he wished him to send for the filly. Mr. Prendergast, not being exactly satisfied, sent the filly back to Waterford, and directed the steward in charge of her to inquire "at Ion's" if there was any probability of a cure being effected. In my reply, I stated that I thought the hernia could be reduced by an operation. This being decided upon, on the 8th of March, after having prepared the filly, I cast and secured her in the usual manner. I then made an opening of about six inches in length through the integument, down upon the peritoneum, which membrane I next cut through, as, without its division, I could not employ my sutures with the same amount of safety. I found the edges of the torn muscles very much attenuated, but, as stated, the serous membrane was entire. I placed four sutures in the deep-seated muscles, leaving their free ends six inches long. I then proceeded in the same way with the panniculus carnosus and common integument, placing in them six stitches, to effect the closure of the opening. All being finished, the animal was permitted to rise. In about an hour afterwards she suffered much pain; this was relieved, however, by an anodyne draught. Subsequently a mild aperient was given, and bran mash allowed. On the 9th, and following days, the subcutaneous cellular tissue of the abdomen was filled with serous exudation, which extended as far forward as the neck. The case, however, went on well, good nursing being the principal thing required. After the sutures gave way, granulation proceeded satisfactorily, and I think I may now pronounce the animal as being perfectly cured.

PARTIAL OSSIFICATION OF THE RIGHT AURICLE OF THE HEART, WITH FIBRINOUS DEPOSITIONS ON ITS SURFACE, AND LIKEWISE IN THE SUBSTANCE OF THE SPLEEN.

By T. W. GOWING, M.R.C.V.S., London.

I HAVE forwarded for your inspection the heart and spleen of a horse that first came under my notice about twelve months ago. The patient was a gray horse, belonging to an extensive cab-proprietor, and, when originally seen by me, he was affected with an eruptive disease of the skin, in the form of elevations or tumours, more particularly along the back, the sides, near hind-leg, lower part of the neck, and the chest. The eruptions were irregular in size and shape; some of them being four inches in diameter, while others were small and circumscribed, and flattened on their surfaces. They were not tender to the touch. The animal's appetite was capricious, the pulse intermitting, and the visible mucous membranes of a yellow colour; the horse was, however, in fair working condition. My opinion was that some derangement of the liver existed, associated with an impediment to the free circulation of the blood. I contented myself by ordering a course of alterative medicine, and directed that especial attention should be given to the selection of the food, which should be generous. The eruptions remained for some time, but ultimately they became absorbed, and in about six or eight weeks the horse's health was so much improved that he appeared capable of fully performing his duties, being, however, a great favorite of the owner, he was only used in gentle work.

After a lapse of three months, the animal was again brought to me, suffering from a similar attack, but in a milder form; he was treated nearly in the same manner as before. The cutaneous eruptions again disappeared, but the horse from this time lost condition, although he was liberally fed with malt mash, oats, and beans. No further medical measures were adopted, but the animal was well nursed by the owner, and very seldom used, as he thought he might ultimately be restored to health. On the 1st of January, 1856, however, he came again under my care, and was now in an extreme state of emaciation. The skin was free from the tumours, but it had a very unhealthy appearance. The coat was staring, and the animal was truly in a very pitiable

condition. The pulse at the submaxillary artery was feeble, slow, and intermitting. Upon my auscultating the chest, there appeared, from the sound of the heart, to be a want of power in it to propel the blood onwards; and from the general symptoms I concluded that this organ was affected with a chronic and incurable disease, therefore, I recommended that the horse should be destroyed.

On a post-mortem examination, I found the stomach and bowels healthy; the kidneys and the bladder were also normal. The lungs, however, were small, and appeared to be compressed. The heart and spleen were extensively diseased.

[*Examination of the heart and spleen.*—The pericardial sac had undergone no change on its external surface, but its interior was studded with fibrinous deposits, varying in size from the head of a pin to that of a filbert. The external part of the heart was similarly affected. The ventricular substance of the organ was unchanged, but the auriculo-ventricular valves on both sides were much thickened, as were also the aortic semilunar valves, leading to imperfect closure of these several openings. The wall of the right auricle contained a large amount of cartilage, and at its anterior part it was completely ossified.

The spleen was rather larger than natural. Its peritoneal reflexion was thickened, and was also remarkably white in colour. The general surface of the organ was studded with tumours, and these extended more or less deeply into its substance. They were apparently produced by a deposition of fibrin into the trabeculæ. The tumours varied in size from a pea to a walnut, and were very dense in structure. On section, the smallest of them were found to be of a white colour throughout, but the largest were intersected with reddish lines irregularly disposed, giving to some parts of the cut surface an appearance very like that of a section of a nutmeg, and to other portions a more granular-like condition.]

CASE OF MELANOSIS FOLLOWED BY ASCITES.

By the Same.

ON Sunday evening, April 27th, I was requested to see an ed gray cab-mare, said to be dangerously ill. The history I received was that she had been ailing for some time past, and had lately been losing her condition, but that until the

previous day she had given no indications of serious ill health. A farrier had bled her before my visit, and which, no doubt, accelerated her death, for she expired soon after my arrival. The owner expressed a wish that I should make a post-mortem examination, which I did on the following morning, and found the spleen and liver in the condition I have sent them to you. She had several melanotic tumours in other parts of the body, and the lungs also were studded with these characteristic deposits, but not to the extent displayed by the liver or spleen. The abdominal cavity was partly filled with fluid, as several pailfuls escaped when the linea alba was divided.

[The spleen was much increased in bulk, weighing about thirty-six pounds avoirdupois. In its general outline it did not differ materially from the normal shape, but on its surfaces it was much altered in form, these being considerably nodulated. On section, it presented an entire mass of melanotic deposit, there being to the unassisted vision no trace whatever left of the original structure of the organ. The liver was also freely studded with melanotic tumours.]

ON THE PHYSIOLOGY OF BREEDING.

*The substance of a Paper read before the South Hants
Farmers' Club.*

By J. D. BARFORD, M.R.C.V.S., Southampton.

ALTHOUGH from the nature of the agricultural pursuits that are carried on in this immediate neighbourhood, the subject I have selected may not be so interesting as it would be to those who farm in a district where breeding is more generally practised, yet to all agriculturalists it is too important a one not to command a good deal of attention. I have chosen it with much diffidence; *firstly*, because it is one with which all of you may be considered more practically conversant than myself; and *secondly*, because I must be indebted to the observations and opinions of others for most of the facts from which, in a great measure, I have drawn my conclusions.

After this prelude, I shall begin by remarking that really but little is known physiologically of the subject, and probably it is from this cause that the breeders of our domesticated animals are so frequently disappointed at the result of their experiments. For example, a man selects

a bay mare with black legs, and unites her with a male having the same distinctives, and if, as it frequently happens, the foal dropped is a bright chesnut with a bald face and white legs, the owner is sadly disappointed and scarcely perhaps guesses at the reason; and this chiefly, I believe, because he has frequently observed that his neighbour is as much annoyed with these freaks of nature as himself. There can be no doubt that these occurrences take place more frequently in different breeds of cattle rather than in races: that is, in breeds into which two or more distinct families have entered; as for instance, the improved Short Horn, as distinguished from the Devon or Hereford; and to these, perhaps, I may add the Hampshire and South Downs among sheep. Yet even among these, the prevailing breeds in this neighbourhood, I have no doubt that many can recall instances of results exactly opposite to what they had hoped for and expected.

It must be evident, to the most casual observer, how difficult it is to lay down any laws or principles on which these circumstances can be explained, controlled, or prevented; and any remarks of mine must be quite unnecessary to convince you that an approach to a right perception of the causes which operate in producing these effects must be highly interesting and important to all engaged in agricultural pursuits. I am free to confess that I do not hope to throw much light on this subject from any observations or experiments of my own, yet by taking a cursory glance at the labours of others, and narrating the results they have arrived at, I may perhaps, by inducing a closer habit of observation amongst men more able and enjoying greater opportunities than myself, indirectly at least, add to our stock of knowledge.

These extraordinary circumstances in our breeding of animals have been far too common to escape the notice of writers on cattle, yet hardly one of them has attempted an explanation, beyond a wild guess or a crude theory, until last year, when Mr. Orton, of Sunderland, read a paper on the subject before the Farmers' Club at Newcastle-on-Tyne. This paper called forth a very able criticism from the pen of my talented townsman, Dr. A. Harvey, which was published in the *Monthly Journal of Medical Science* for August last; and to that criticism I am indebted for much of the limited information I possess on the subject.

Mr. Orton's argument, as it is fairly stated in the critique I have just alluded to, is—"that in the reproduction of the animal species there is no casual blending of the parts and qualities of the two parents, but that each parent contributes

to the formation of certain structures and to the development of certain qualities." And advancing a step further, he maintains that "the male parent chiefly determines the external characters and locomotive powers generally, while the female gives the internal structures and the vital organs." His experiments and examples extend over no less than three divisions of the animal kingdom—beasts, birds, and fishes, and they appear to be most fairly and judiciously conducted, and very generally to warrant the conclusion at which he has arrived. Where they have not done so, he offers such explanations of the fact as to account for it as an exception to the rule, and as being produced by temporary and uncertain causes. Unlike many modern theorists, who, having hastily adopted a crude and ill-considered idea, wrest the results of their experiments so as to make them conduce towards the proof of it, Mr. Orton has worked his way slowly and step by step from his observations through his experiments to his theory; and it is this which entitles his opinion to the greatest weight. In addition, Dr. Harvey has advanced purely physiological reasons, which make its truth not only possible but probable.

But notwithstanding all this; notwithstanding that the naturalist and physiologist both appear to declare for Mr. Orton's theory, I must say, with much deference, that I still doubt whether it can be accepted as a rule, or that, at least, if it be one, it is liable to too many exceptions to render it of much practical value to the breeder; and I ground my scepticism principally on physiological facts.

In a pamphlet 'On the Form of Animals,' written by the late Mr. Henry Clive, one of the most eminent surgeons and physiologists of his day, it is laid down as an axiom, "that the external form is only an index to the internal structure;" and I fully coincide with the opinion he has expressed. As this position is of great importance, in short the basis of the argument on which I ground my dissent to Mr. Orton's views, I must take leave to detail a few of the reasons which have induced me to accept it as a true one. Every one at all conversant with anatomy is aware, that in a foetus the vital organs are invariably formed first, and the framework, viz., the ribs, limbs, &c., afterwards; or, as Dr. Harvey expresses it, "the whole osseous framework is moulded in adaptation to the softer structures immediately related to it;" and no one need be reminded how soft and yielding are the bones of all young animals. Now it is evident, that if the vital organs are healthy, fully developed, and vigorous, the ribs, pelvis, &c., must be well formed also, and *vice versa*; there-

fore any one must perceive at a glance, that the connection between them is too intimate and too close to admit of the vital organs being conferred by one parent and the trunk by the other. This appears to me to dispose effectually of the possibility of Mr. Orton's theory being correct, in so far as the trunk and abdomen are concerned. And can we suppose that these have no influence on the formation of the limbs, inasmuch as the scapulæ or shoulder-blades, and ossa innominata themselves, fitting as they do closely and intimately with the trunk, must have a very great influence on the shape of their continuations, the legs and feet? The purely physiological reason advanced by Dr. Harvey, which I have already alluded to as affording presumptive evidence of the correctness of Mr. Orton's theory, may perhaps be combated by somewhat similar reasoning. It may thus be concisely stated: "While the fœtus is developed from that part of the ovum called by physiologists the germinal membrane, this membrane itself consists of two layers, an outer and an inner one. Of these layers the outer one gives rise to the whole set of organs concerned in the strictly animal functions (*i. e.*, the external ones), while the inner gives origin to those concerned in the strictly vital functions. This fact, considered with reference to Mr. Orton's theory, appears at first sight to be a most interesting and significant one; and, as Dr. Harvey observes, "it is scarcely necessary to remark how the very keel or foundation, so to speak, of every animal is laid down by nature, which exactly tallies with Mr. Orton's position." And so it very strongly appeared to me on my first reading it; but in the very next page another physiological fact is related, which seems to militate as strongly against it. It is this: "At the conception of a fœtus the spermatozoon (vivifying seed) of the male is not simply brought into contact with the ovum of the female, but into the closest possible union and incorporation with it; being, in fact, either absorbed by, or becoming intimately blended with some part of the ovum." Now, after this thorough mingling and incorporation of both the male and female seed has taken place, let me ask, is it likely, is it possible, that the parts of the impregnated ovum should separate, or be separated mechanically as it were, and again be resolved into two distinct coverings? Any one who has noticed the thorough incorporation that takes place between two liquids in a vessel, will require a great deal of persuasion before he can believe it possible that they can be separated from each other and brought to the same state they were before mixing. But it seems that, in addition to the two layers or membranes

already mentioned, a third is subsequently developed by the growing requirements of the foetus, this being situated between the other and older membranes, and having the office of originating the heart and blood-vessels. This third membrane would appear to be the joint production of the other two, from the circumstance of its contributing a set of organs equally necessary to both the external and internal parts of the body. If this be so, it appears to me an additional reason for disputing Mr. Orton's position, that "the respective parents contribute certain portions of the offspring," and a powerful argument in favour of the theory of their united action and common influence over every part of the foetus. But I do not for a moment infer that each parent exercises this influence in exactly equal proportions.

It may be further remarked, that Mr. Orton's experiments, so far from establishing the theory of a divided and definite action on the part of each parent, expressly admit the influence of both even over the external characteristics. He himself says: "I do not mean it to be inferred that either parent gives either set of organs uninfluenced by the other parent." And Dr. Harvey, when speaking of Mr. Orton's strongest instance, the mule and hinny, admits, that "in neither hybrid have we the perfect head and limbs of one parent grafted, as it were, on the proper body and barrel of the other." The animals are both of them composite; that is, composed, as it were, of both parents, and which it is evident would not be the case, provided the male contributed the external organs uninfluenced by the female, and the female wholly provided the internal organs. This is, in fact, what Mr. Orton's theory would assert, if it could be proved as a law liable to no exception. It is so obvious that this is not the case, that Mr. Orton himself admits, that there is at least one important cause often at work, which is very apt to negative entirely his primary law. I shall, perhaps, allude to this again before I conclude, as I have to mention other circumstances which may often modify or entirely suspend the action of this or any other cause that may be named as influencing the reproduction of animals. So that, after all, we cannot say that we are *certain* of more than that the offspring will exhibit frequently a leaning towards the male parent as to external characteristics, and to the female as to the internal ones. It is rather singular that this appears most strongly in hybrids, which are never likely to become general in our principal breeds of domesticated animals, for the very existence of these appears to be so opposed to the

laws of nature, that she refuses to perpetuate them under any circumstances.

Having thus ventured to doubt the possibility, physiologically considered, of a definite and decided control of each parent over particular portions of the progeny, it is perhaps incumbent upon me to propound some theory of the reproductive process, or else adduce one from some recognised authority on the subject that shall harmonise with the principles for which I contend, of the united and common action and influence of both parents. I am almost ashamed to admit that I am not sufficiently acquainted with this abstruse science to speak with confidence upon it, and as I do not happen to have any work on the details of the subject by me, I must be content to hazard a conjecture. I will again refer to Mr. Orton for the fact. He says, when speaking of the female ova in their normal state: "Of whatever form, character, or number they may be, they are uniformly composed of three essential parts—a yolk, a germinal vesicle, and a germinal dot." It is not distinctly stated that this yolk surrounds and encloses the vesicle, and the vesicle the dot; but it seems this is a fair inference—in fact, the only likely arrangement. Mr. Orton then proceeds to say, that "modern physiologists are pretty well agreed that the spermatozoa of the male attach themselves to the *vesicle* of the ovum, and that upon this vitality commences, and the vesicle swells and enlarges longitudinally and laterally, and gradually invests the yolk." But it will be at once apparent that this theory entirely ignores the existence of the germinal dot before alluded to, or at least does not assign any function whatever to it. Now every anatomist must be aware that nature never exhibits, in animal or vegetable structures, the least particle, however small, which has not its individual and distinctive office, any more than she fails to provide everything necessary for all her requirements. And although this dot may be very minute in size, as indeed the name given it implies, it must not on that account only be supposed to be without importance in the curious and mysterious process of reproduction. On the contrary, the very existence of this minute and distinct substance, in the very centre, as it were, of the organs of reproduction, would seem to argue a very important office and duty for it. Now my supposition, and I think you will not say it is an unnatural one, is that this dot is affected by the union and incorporation of the seed of both parents described by Dr. Harvey, as before mentioned, and that there vitality commences, and thence extending on every side, it is evident

that it first vitalises, or perhaps produces, the inner layer, and next the outer one, which you will recollect I have before alluded to as giving rise to the internal and external organs of the fœtus respectively. This supposition is in perfect harmony with the physiological fact, that the internal organs are formed first, and the external ones subsequently, and appears to me to acquire some degree of confirmation from it. If my surmise be a correct one, it will be necessary for those who uphold the doctrine of a divided and distinct action of each parent, to prove that this action and influence can be detected in a point so small as to be called a dot, and requiring perhaps the aid of a microscope to render it visible. If called upon to assign any rule on this difficult question, as perhaps you will think only reasonable, after venturing to dispute the opinion of such able observers as Dr. Harvey and Mr. Orton, I must give it as my opinion that none can be laid down as being of universal application, unless it be the old one, that "like produces like," each after his kind. This rule is liable to many disturbing influences, and may be modified by many causes, often so secret and mysterious, as to defy detection, and to perplex even the most acute observer; and to the consideration of these I will now direct your attention. But from the length to which this paper has already extended, I fear I cannot do more than enumerate some few of them without giving the details of the observations (chiefly made by others) on which the existence of these influences are presumed to exist.

1st. There is the broad fact, so generally observed, not only by Mr. Orton, but by almost every one who has paid any attention to this subject, namely, that of the superior influence of the male animal. This will be conceded, I imagine, without adopting Mr. Orton's theory, that each parent exercises an arbitrary and definite influence over isolated parts of the offspring. I cannot pretend to solve a question which has been found so difficult of solution by the ablest physiologists, but perhaps the profound observations in the latter part of Dr. Harvey's pamphlet may indicate an approximation to the true explanation of this interesting fact, and to it I must refer those who are anxious to pursue the inquiry further.

2d. Mr. Orton has also described another rule as affecting the offspring, "that the female system imbibes certain influences from the male which modify the future progeny of other males." I may remark in passing, that the existence of an element so powerful as this in its influence over the offspring, affords us strong additional grounds for venturing to doubt Mr. Orton's first and leading position. However

this may be, there can be no doubt that such influences do exist, and they have often great force in modifying future offspring. We know that similar results sometimes occur when there has not been any connection between the animals; a singular instance of which is given in a pamphlet, 'On a remarkable effect of Cross Breeding,' also by Dr. Harvey, which proves that a strong affection entertained by a bitch, for a dog of another and distinct breed to her own, exercised a very powerful influence over the offspring, and which was continued, although gradually weakened, over two or three successive litters of puppies. So that, in addition to Mr. Orton's second rule, we have another, which may disturb all our calculations, which is perhaps entirely mental in its character, and therefore extremely difficult to ascertain and control.

3d. There is the influence of visible objects at the time of conception on the imagination of the female, and perhaps of both parents. The earliest, and perhaps the most striking instance we have of this disturbing influence, occurs in Holy Writ. In the 30th chapter of Genesis is an account of the mode in which the shepherd patriarch became possessed of Laban's flock. It is there stated, that by placing sticks peeled in rings before the cattle at the time of conception, he produced ring-streaked, spotted, and speckled offspring. It will, perhaps, be said that this was an express interposition of Divine Providence to establish Jacob in wealth and prosperity; but there are instances on record where the colour *at least* of the offspring has been arbitrarily controlled by adopting similar means; and from what Mr. M'Gillavray says, as quoted by Dr. Harvey in the pamphlet before alluded to, the Scottish farmers imagine that this influence may also be active during gestation, a supposition which acquires some confirmation from the fact, which cannot fail to occur to all medical men, of the frequent appearance of marks in the human race, and which are supposed to be the result of a morbid imagination in the mother during pregnancy.

4th. Another powerful element in determining the characteristics of the offspring, is the tendency of all animals to what is generally called, I believe, "breeding back;" that is, to reproduce characteristics that have been dormant or held in abeyance for even many generations. The knowledge of this fact should tend to diminish, if not entirely to dissipate, our surprise at the unexpected results of some of our breeding experiments; and perhaps this is the place where I should notice what I think to be practically the most dangerous

error into which Mr. Orton has fallen, namely, that wherein he implies, at least, if he does not assert, that internal disease of the male is immaterial, inasmuch as he does not transmit his internal peculiarities to the offspring. Now, even admitting, for the sake of argument, that this is correct, it is apparent that at some time or other his "peculiarities," even internal ones, may revive, and cause disappointment long after he is dead and forgotten. The remembrance, therefore, of this tendency ought to render us doubly cautious in every step we take.

5th. I may mention what, perhaps, is not so much a cause as a symptom, and which possibly only extends to the colour of the offspring; I mean the colour of the mouth, tongue, and palate. It has been remarked by ancient agricultural writers, Virgil among others, "that the colour of the veins of the tongue and palate of the ram, governs that of the lamb's fleece." Perhaps this may not be wholly true; but it has certainly been remarked, by at least one practical man in the present day, and who has mentioned it to me, as an almost certain indication as to when a black lamb may be expected. Further observation on this might determine whether any and what amount of credit this assertion deserves.

6th. Besides these disturbing influences which I have mentioned, it cannot be doubted that there are others exercising a great deal of influence over the offspring,—for instance, the comparative animal vigour of the parents; for if this quality be more developed in one than the other, it is only reasonable to suppose that this parent would exercise most influence over the young. We may also fairly suppose that temporary disease may not be without some influence,—or the comparative organization of the two parents,—and, perhaps, many others, which I may have failed to observe, or have omitted to mention. So that even when, availing ourselves of all that is known on this subject, we imagine we have provided for every contingency, a slight degree, more or less, of any of these causes I have named may entirely upset all our calculations; or their influence, or that of any one of them, may be increased, neutralized, or wholly destroyed by a combination of any two or more of them.

From what I have said, you cannot fail to perceive the immense difficulty and uncertainty which invest the subject I have introduced, and the almost impossibility of our predicting or controlling results by any precautions we may take; and after what has been advanced by me, I fear I shall be open to the charge of pointing out difficulties without pointing out

any means to overcome them—to which charge I must certainly plead guilty. But I do hope, as I said at the commencement of my paper, that I may, by inducing a closer observation of the operations of nature, and a regular habit of recording them, indirectly, at least, add to our stock of knowledge on this most interesting inquiry. This is the utmost I proposed to myself, and all I can hope to accomplish.

INTUSSUSCEPTION OF THE INTESTINES IN THE DOG.

By T. ORME DUDFIELD, M.R.C.V.S., Cheltenham.

A FINE fox-hound puppy, nearly a year old, was brought to my infirmary on the evening of February 24th, being very ill.

The most prominent symptoms present are a semiconsciousness, associated with so much general weakness of the extremities, as to approach to paralysis; eyes dim and deeply sunken in the orbits; mucous membranes slightly injected; pulse rapid, feeble, and irregular; breathing but little disturbed; and the general surface of the body warm. An offensive odour escapes from the mouth; purging is also present, which is accompanied with tenesmus, but the animal gives no other indication of pain. There is no desire for food. The patient is also much emaciated, and the skin is covered with a slight eruption. By pouring a little cold water on the head, the animal can be roused from his stupor, otherwise he lies extended and quiet on his bed, seldom altering his position.

Diagnosis.—Severe intestinal irritation, complicated with much derangement of the nervous system.

Prognosis.—Unfavorable. A dose of the castor-oil mixture was administered.

25th.—No improvement; the alvine evacuations are extremely offensive, of a dark chocolate colour, consisting almost entirely of blood and mucus, to the exclusion of solid or alimentary matters. Mucilaginous matters in a liquid form and diffusible stimulants were exhibited; a seton was likewise inserted in the neck, and the head and abdomen blistered.

26th.—Progressive weakness. Spasmodic twitchings in the right auricular region are present; the coma is also more complete, but it can be partially removed by cold effusions. The excrements are scanty and voided with pain. The

breathing is still tranquil, but pulse is very tremulous. Since yesterday the mucous membranes, and also the general surface of the body, have become deeply tinged with a yellow colour. The seton and blisters have had no effect. Similar treatment to that of the preceding day was employed.

27th.—The dog was found dead this morning.

Post-mortem.—The viscera, generally, were found to be congested and of a yellow colour—every tissue being infiltrated with bile.

The cause of death proved to be intussusception of the bowels; a large portion of the ilium having got within the colon. The invaginated gut was completely disorganized, and the mucous membrane of the large intestines throughout was likewise sphacelated. The whole tract of the alimentary canal was void of fæculent matter. The kidneys were slightly enlarged, and more than usually friable, and the left kidney in particular was much discoloured on its external surface. The liver was greatly enlarged, but principally from congestion. Its texture was soft and easily broken down. The gall-bladder was distended with inspissated and black-coloured bile. The right side of the heart was distended with blood, and the great vessels were filled with fibrinous clots, which had an appearance of being stained with bile.

Remarks.—The man in charge of the hounds could not account for the illness of the animal. He had noticed it but a day or two before—but he admitted that this hound, conjointly with three others, had taken, on the 16th ult., a large dose of sulphur. Half a pound of this mineral was mixed with some food, and given at three different times. The third time, however, it was refused by the dogs. This fatal accident would appear to have originated in hyper-catharsis, from an overdose of sulphur—the animal having taken at least one ounce and a half. It is somewhat strange that the illness was not noticed earlier, as the intussusception of the bowels, in all probability, quickly supervened upon the fatal dose.

The coma was probably due alone to the biliary absorption.

The impression created in the mind of the owner by the animal's illness was that poison had been taken—accidentally or otherwise; and when first brought under my notice the disease was too far advanced to admit of a positively correct diagnosis being made.

CASE OF FRACTURE OF THE SKULL. RECOVERY.

By W. Cock, M.R.C.V.S., Willesborough.

ON January 31st, 1856, my immediate attendance was requested to see a four-year old mare, the property of Mr. John Stevens, of this place, which had run away in harness in the town of Ashford, and dashing against the front of a house, her head came in contact with the shutter-fastening, by which means the cranial cavity was penetrated. On my examination, I found that the iron fastening of the shutter had cut cleanly through the skull, directly upon the sagittal suture, and had then passed between the brain and the right parietal bone to the distance of two inches, fracturing the bone, and elevating it from the brain. I told the man who had charge of the animal that there was no hope of her recovery, and I hesitated whether I had not better recommend that she should be at once destroyed, she being in a state of collapse, with the eyes closed, and resting her muzzle on the manger, the pulse being likewise perfectly indistinct. I, however, determined to wait a time, and after allowing her to remain quiet for about two hours, I again saw her. The symptoms were on the whole the same, but the pulse had become perceptible to the feel. Under these circumstances I resolved upon treating the case, and commenced by the withdrawal of blood to an extent bordering on syncope, gave a bold dose of cathartic medicine, ordered the skull to be kept wet, and for her to be made as comfortable as the circumstances would allow of, and to be watched carefully during the night.

February 1st.—The symptoms present this morning led me to anticipate that tetanus would follow. I, however, did little beyond having fomentations constantly applied to the wound, and exhibiting an occasional enema.

2d.—There is a slight improvement; the eyes are partially open; the animal is more conscious, and drinks a little “bran tea;” the bowels are responding to the action of the medicine. Continue the fomentations and dress the wounds with a digestive.

3d.—Progressing favorably. The eyes are more open than yesterday, but frequent sighings are present. She drinks a little thin gruel. Give as follows:

R Aloës Pulv., ʒij;
 Digitalis Pulv., ʒj;
 Potass. Nit., ʒij;
 Mass. Com., q. s. fiat bolus.

Continue the fomentations and dressings to the wound.

4th.—Wound suppurating. General improvement well marked. Eats a little bran mash with scalded oats. From this date to the 7th she continued to go on well, when a sudden change for the worse took place. The wound ceased to discharge, and all the symptoms of coma returned. In a state quite unconscious of anything, she fell to the ground, the tongue protruding from the mouth, &c. With my scalpel I enlarged the wound in the skin, and passed my probe into the cranial cavity, when I gave exit to some pus which was pent up in the skull and produced pressure on the cerebrum. The cause of this relapse being removed, the animal gradually improved, and, with my occasional attendance, in about three weeks from this date she had perfectly recovered.

CHRONIC DISEASE OF THE URINO-GENERATIVE ORGANS OF A COW.

By F. J. PARSONS, Bideford.

I SEND you a small box containing the kidneys of a cow which had been suffering from disease of the urinary and generative organs for a long time. The history of the case, as far as I have any knowledge of it, is as follows: A few weeks since, a butcher in this neighbourhood bought the cow at a fair, warranted to be all right. The buyer, however, when dealing, remarked that she was very thin in condition, and looked bad in her coat. The reply was that she had been nearly starved, but that she was sound.

She had a fine fat calf by her side, which induced the butcher to buy her; but the fact is that the cow had been ill long before this calf was born, and it, without doubt, was taken from another cow and put with her on that day, for on the following morning the cow was found to give but very little milk, and this of the worst possible quality, not a whit better than skim milk. The calf was killed and sold as good veal, but the cow wasted daily, and was almost always straining, as if a portion of the placental membranes remained in

the uterus which she wanted to expel. Seeing these pains, I was induced to pass my hand into the uterus, and in so doing, about three inches from the labia, I detected a small tumour containing about an ounce of dark-coloured fluid. The exploration appeared very painful to the animal, and when my hand had entered the womb I found a large spongy mess occupying its interior. The discharge coming from the parts was most offensive. I washed the vagina, &c., as clean as possible with tepid water, and ordered a disinfectant lotion to be thrown up, and which was done every day for a week. After this time she was left without treatment, and last night the owner had her killed. I would have gladly sent you the bladder and womb, but they were so much cut to pieces, that I thought it useless to do so. I found all the urinary organs diseased, and the bladder so much contracted that it could not possibly contain more than two ounces of fluid at one time. From the state of the womb I am quite sure she could not have had a calf for, at the least, six months, if then. The lungs were sound, but the liver gave evidence of chronic disease. The stomachs were likewise healthy, but the intestines were discoloured in patches.

[Externally the kidneys were apparently unaltered in structure, but were more pallid than natural. They were greatly increased in size, one weighing $4\frac{1}{4}$ lbs., and the other nearly as much. They measured about twelve inches in their long, and six in their short diameter. They were flaccid to the feel, and evidently contained a good deal of a semi-fluid material. The ureters were also much enlarged in calibre, and thickened in their coats. Each was filled to distension with a viscid mucus of a brownish colour, which extended into the several branches of these tubes to their origins from the lobuli of glands. The pelvises of these lobuli were similarly distended, and the tubular structure of each was partially absorbed, but otherwise healthy.]

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Late Lecturer on Veterinary Medicine and Surgery, London ;
Professor of Anatomy and Physiology in the Edinburgh
Veterinary College.

(Continued from p. 286.)

TREATMENT OF PLEURO-PNEUMONIA.

WHEN the most sedulous care and attentive, though, perhaps misdirected, study has been thwarted in the prosecution of an object, a morbid anxiety and reckless propensity to advance at any cost may be engendered. This, like many other dogmas, may be established by reasoning on various subjects, and not least by reflecting on how individuals attempt to prove the validity of a theory—the monster creature of their imagination—by experiments, or in striving empirically, without the guide of sound principle and true doctrine, to discover the treatment of many forms of disease.

The intractable nature of pleuro-pneumonia has been the cause of much curious thinking, more reckless doing, and of incomparably less attentive, calm, considerate study and reflection. I am not without facts in every way to prove this assertion.

Besides the random trials of the repudiators of sound research, three views have been taken of the nature of the lung disease, and on these have been based three systems of treatment.

1st. By one, the larger section, perhaps, of the veterinary world, it has been looked upon as an inflammatory affection of a specific nature—infectious, contagious, or manifesting itself under the combined agency of cognizable causes and epizootic influences.

2dly. It has been viewed as a non-inflammatory disease. Those who participate in this idea reason not on the cause, except as some depressing agency; and the inference is drawn by one series of observers from the total intolerance for antiphlogistics; and by another, whose advocate is Schmelz, of Grebenstein, from post-mortem study—from the view taken of the *modus operandi* of the supposed agencies in the production of the disease.

3dly. A more determined, and more prejudiced and noise-creating party, hold to the specificity of a pleuro-pneumonic virus—to its transmissibility, its reproduction, its property, even, of latent vitality—and, not content with this much,

hold out as well that its proximate elements are morphologically different from any other vital structure of homologous or heterologous nature.

It is clear from the antecedent, that in my usual attempt to trace the subject up through its various stages of development to its present state, without dilating unnecessarily on collateral topics, I must treat many dogmatically,—the occasion will present itself for further discussion. But my object being to speak of the *treatment* of pleuro-pneumonia, I cannot omit further reflections on the nature of the disease.

There are certain products of morbid action that are not the result of an accidental process, but are regulated in their formation by as complex a series of organic laws as the preservation of the integrity of structure and normal exercise of vital function. The products of inflammation are thus readily distinguished from any mechanical exudations, as well as from the materials accumulated in natural or artificial cavities by simple exosmosis. It is by the ulterior changes, whether retrograde or progressive, of materials separated from blood, that we can unmistakably determine as to the nature of the process that led to their existence. Serum is the mechanically separated fluid that fills the distended serum-cavities and bursal enlargements; but when the properties of coagulation within the body, of cellular development, and vascularization are met with in the material exuded, there is no doubt as to the nature of the process giving rise to its exudation. Vascularization need not necessarily occur, and the cellular development may be checked and degenerate, but we have still abundant proof afforded that in inflammation alone such an exudation could occur. The solidified lymph that plugs the bronchial tubes, that gluts the interlobular tissues, with the inflammatory globules and fibro-plastic cells that the microscope reveals in that lymph, never are formed in simple hyperæmia, or congestion due to lack of tonicity of the capillary vessels, which lack of tonicity, according to Schmelz, occurs in consequence of the depressing influence of the causes in operation, that act locally on the lungs as well as generally on the constitution, in lowering the vital powers of cattle affected with pleuro-pneumonia. I have seen some beautiful preparations by Hering of the lymph exuded in the bronchial tubes and air-vesicles forming perfect casts of lung tissue; and we all know that plastic, coagulable lymph, is never seen on mucous surfaces except, and that rarely, in inflammation. There has not been any other specific process discovered whereby such casts can possibly be formed.

Schmelz, whose remarks are published in the *Repertorium*

for 1855, at page 200, says, that, "according to the stage of the disease when the animal died, there is either a simple exudation into the interlobular cellular tissue of a limited portion of the lung, or the exudation may have already extended through the whole organ, or the exuded material is *condensed*, leading to the so-called hepatization; rarely is gangrene, and never is suppuration, witnessed. The latter result would be met with if the lung plague—as the Germans call it—were an inflammatory disease." I need scarcely say, that such is not reasoning—such is not argument. Condensation is not the process whereby lymph solidifies, and whereby a kind of *false* hepatization can occur. With reference to the last sentence of Schmelz, it would be just as well to say, that because in peritonitis suppuration rarely, if ever occurs, what is supposed to be in these cases inflammation of the peritoneum is no inflammation whatever.

Whoever has observed the firm adhesions frequently undergoing the corneous degeneration that Paget has graphically described, the fibrillation of the lymph and its firm connection with the pulmonary or parietal pleura, can never for one moment fancy that "condensation" of a non-inflammatory product could possibly give it such an appearance and such structural peculiarities.

I have just had occasion carefully to examine a specimen in which a strongly adherent false membrane covered either lung. Its semi-organized and firm condition was more than enough to prove to what process it owed its existence. At the same time, the small, weak, imperceptible pulse at the jaw during life, the whole train of constitutional symptoms anything but indicative of active local inflammation, might, in the minds of some, be ample reason for opposing my views on the subject. But, how many are the instances of unsuspected inflammatory attacks of internal organs, unsuspected because occurring under such circumstances that many of the usual signs of acute disease were not to be recognised. If a man, who can indicate the seat of pain, dies of pyæmia with inflammation, and even suppuration, of both femoral veins, that had escaped the vigilant attention of the most expert in diagnosis, clear proof is not wanting of the tenableness of my proposition. Even in limiting ourselves to discuss the diseases of animals, the question may be asked—How far do the constitutional symptoms in influenza indicate the irritating effects, in the respiratory passages, of the cause in operation? Still, in this instance, active inflammation may be marked by the general symptoms of depression and low fever.

I think it is useless insisting further on the above facts. I have done so at length, because converse opinions have gained credence; and I have no hesitation in saying that they have anything but a salutary effect on the minds of young pathologists. It may still be necessary to say that, though the infectious nature of pleuro-pneumonia is much to be doubted, there is no question as to its, mostly, depending on epizootic influence; it may be more fatal when many causes concur for its extension, but, under all circumstances, the essential exciting agency operates in lowering the constitutional vigour, in diminishing the systemic tone, and the disease is of a low asthenic or typhous type. And, like in all plagues, it would appear that the most successful plan of treatment is that of supporting the vital powers during the long, and often, in itself, killing process of elimination of the morbid poison and morbid products. It is on this fact that success in adopting a tonic rather than an antiphlogistic system of treatment depends.

The treatment first adopted in pleuro-pneumonia, especially by those of the Broussais school, was strictly antiphlogistic and revulsive; and impressed with the belief that it is fatal to do anything but deplete and counter-irritate in inflammatory disease, the first suggestion of a totally opposite plan, on which to manage cattle affected with the lung disease, was spoken of in a highly depreciating tone. Sundry explanations were given by those of the old school, who, persuaded of the efficacy of sulphate of iron in such cases, argued that the *modus operandi* of certain agents, from various unaccountable causes, differed widely in different complaints, so that the diseases themselves might in some cases almost be classified according to the treatment comported than to their real nature. Busse, veterinary surgeon to the late Nicholas of Russia, somewhat supported such a notion, in a memoir he published in the *Repertorium* for January, 1852, and he warmly expresses himself as follows: "But who, at any time, having with attention observed the enormous disorganization and after-products—especially the masses of false membranes, shreds and adhesions, the quantity of effused serum, and more particularly the fearful destruction of the one or of the other lung, its consistence and weight, sometimes amounting to from thirty to sixty pounds—would, according to our precepts, look upon the sulphate or other preparation of iron, as the very agent calculated to overcome the morbid plasticity of the blood and the atony of the lungs? Nevertheless, this is just the remedy which—contrary to all the views and expectations of men, against all

learned computations, physiological or chemical interpretations based on the chemical constitution of the animal body that has been so worked at and analysed,—compensates for the probably failing substance in the blood and in the lungs, in that way re-establishing the normal composition, and hence a strength-imparting condition ; and, in this manner, the diseased process is neutralized or overcome.” My readers must pardon long sentences ; their abstruse construction is as deficient in itself as the explanation Busse wishes to give us of the action of sulphate of iron. Still he writes with such an earnestness, and, in many other respects, with such a knowledge of his subject, that his opinions cannot be overlooked. He may be right in his meaning, but he fails in the exposition of that meaning. Lower down, after having enforced a good number of facts, on which he has established his views, he says that he exempts himself from further remarks, inasmuch as opportunities for accumulating other proofs of the value of this specific will not fail to present themselves, and he hopes soon to hear of still more confirmatory results. Busse’s reflections, be it observed, are on no discovery of his own, but principally on what MM. Rodemacher and König, the one a physician and the other a veterinarian, had recommended and recognised as effectual in the treatment of pleuro-pneumonia.

The sudden transition of the opinions of many from the belief that antiphlogistics were best at one time, and at another that tonics alone could save our cattle, was not so marked in Great Britain as elsewhere, and a modified depletive course, with the use of stimulants, was enjoined. Blistering, though it has been observed to aggravate the disease at the time, has to the present day been looked upon as attended by ultimate favorable results, and animals have been supported through the disease by the exhibition of sulphuric or nitric ether, ammonia, creosote, and other such agents. It must, however, be remembered, that stimulants do not tend to increase tone so much as they momentarily excite irritability, and that, as their effects are not persistent, their value in overcoming atony is questionable.

If due attention is paid to the exhibition of iron in any of its forms, not empirically used, but wisely employed when not palpably counterindicated, are the results at any time more favorable than when other drugs are exhibited? Dubois, a Belgian veterinary surgeon, has performed some experiments bearing on this question, having seen that one of his professional brethren, Dupont, strongly recommended it. Out of thirteen animals treated with the sulphate of iron, ten recovered

and three had to be killed; other five animals, strictly treated as Dupont suggested, had also to be destroyed; facts that are not highly in favour of the method of treatment.

Maffei, of Ferrara, and Lafosse, of Toulouse, speak strongly in favour of blistering, setons, and rowels; and, as it is well known, since it was first suggested to inoculate for pleuro-pneumonia, the beneficial (questionable) effects of the process have been attributed to the local suppurations induced; operating as suppuration would do when brought about by the simple introduction of a foreign agent beneath the skin—an opinion which experience, both recent and remote, enables me to confirm. On this topic, Mr. Simonds' report to the Royal Agricultural Society of England is full of interest and sound sense.

I have, lastly, to allude to that portion of the essay of Mr. Schmelz which more especially refers to treatment. It is this paper which has engaged our attention nearly at the commencement of this article, and with its further consideration at present I shall conclude.

Mr. Schmelz says that the object to be held in view, in the treatment of pleuro-pneumonia is to overcome the paralytic condition of the nervous system, and to regulate the functions of assimilation and secretion. This object is attained by the administration of astringent and stimulating medicines, as well as by tonics under special circumstances. Professor Gerlach, of Berlin, uses tannin or sulphate of copper with alum. These means are spoken of very favorably by Schmelz; and respecting the use of iron, he says that, in the autumn of 1849, it rendered him very essential service, and he chooses it as a restorative medicament; and to effect resolution by absorption of the diseased product, he orders half an ounce of sulphate of iron, with a scruple of powdered digitalis, to be given twice in the day. The digitalis after a few days induces loss of appetite and disturbance of the nutritive functions, and then with the iron he administers aromatics. Schmelz ends by saying that the character of the disease is not always the same, and the methods of treatment must vary accordingly. For pleuro-pneumonia, much less even than for other diseases, there is no specific.

The practical lesson that, I think, is taught us by the nature of the conflicting statements that I this day commit to the pages of the *Veterinarian* is that theories often obfuscate our powers of vision and perception; though I admit that at times they lead to bright results, to brilliant discoveries. That matter of fact, and attentive study of all *that is* matter of fact, can alone tend to enlighten us. The disease we have been speaking of is one associated with extensive exudations, unmis-

takeably inflammatory, hence the name it has received—"Pneumonia *exsultatoria* contagiosa." On the other hand, it is of a low typhous type; hence another appellation for it, of "Pleuro-pneumonia *typhosa*." As to treatment, then, I shall say with Dr. Bennett, "The foregoing facts and considerations must lead us to the conclusion, that practically the medical man may be called upon—1st, to prevent or diminish the extent of an exudation; 2d, when it has coagulated, to further its removal from the animal economy; or 3d, if this cannot be accomplished, to render its products as little injurious to the system as possible. In each case, we can only proceed rationally by knowing the manner in which nature operates, and assisting those curative changes which she invariably attempts." I have no hesitation in saying, that in the first stage setons are very effectual—purgatives and diuretics are often useful, but nothing will be attended with more benefit than combining with these the use of gentle tonics, especially the mineral acids and mineral salts. My faith is far from resting on blisters and on stimulants; the latter induce systemic excitement without equalising the balance of the animal functions, and the former irritate without leading to absorption of the material thrown out into the lung tissue.

65, YORK PLACE, EDINBURGH.

(*To be continued.*)

Facts and Observations.

A HERD OF RABID DEER.

THE following statement having appeared in very many of the public prints, we were induced to inquire into the circumstances, and have received the subjoined letter from Mr. Cartledge, M.R.C.V.S., relating thereto.

"A HERD OF RABID DEER.—*Rabies*, or hydrophobia, has shown itself to such a serious extent at Stainbrough, near Barnsley, as to excite the alarm of the inhabitants of that locality, and to attract the attention of medical men. The disease began to exhibit itself on a small scale in a herd of deer in the latter part of last or early in the present year, immediately after one or more mad dogs were seen roaming about that locality, one of which is supposed to have communicated the contagion. Nearly 100 deer have already fallen victims to its effects. While in a state of disease, these otherwise innocent and playful animals foam at the mouth, worry each

other like dogs, and tear off each other's hair and flesh, and when placed in a state of confinement bite at whatever comes within their reach. With these symptoms, the above number have already died, and others are continually being affected by the disease. Five or six dogs have also died at the same place, exhibiting exactly the same symptoms. Until recently the disease was not suspected to be rabies, but attention has been drawn more particularly to the matter, through a child belonging to one of the workmen having been bitten by one of the dogs. This caused an alarm, which led to a medical gentleman (M. T. Sadler, Esq.) being called in, and on investigating the circumstances he has pronounced the disease to be *rabies*, and, in his official capacity of medical officer of the Barnsley Local Board of Health, has issued a timely notice or caution to the inhabitants, in which he states that there cannot be any reasonable doubt that hydrophobia has manifested itself to a serious extent in the neighbourhood, and he calls upon all persons to be on their guard to protect themselves and their families from the infliction of this terrible malady."

Mr. Cartledge thus writes—

SHEFFIELD; *April* 19, 1856.

My dear sirs,—I very much regret being unable to furnish you with any important particulars respecting the herd of deer said to be rabid. The subject has caused some excitement at Barnsley, and the medical men there are much at variance in their opinions as to the nature of the disease, and of its origin.

None of the dogs said to have died have been proved to have done any harm, nor did the child that was bitten by one of them sustain any further injury. I sent my assistant over to Stainbro' to obtain all the information he could, but beyond the fact of a number of deer having died under some suspicion of their being affected with rabies, he could not get any reliable information. It was said that when the suspected deer were caught and confined in a shed, that the slightest noise appeared to cause much excitement amongst them, and they would butt at the sides of the building with repeated violence. My own impression is that the disease is not rabies, and this opinion is strongly held by one of the disputants at Barnsley, Dr. Jackson. If, however, an opportunity serves, I will procure some saliva from one of the diseased animals for the purpose of testing the matter by inoculation.

I am, in haste, yours faithfully.

To Professors MORTON and SIMONDS.

A FLOCK OF RABID SHEEP.

"WE are sorry to record a severe loss that has been sustained by a hard working farmer named Willis, of Nuffield, near Nettlebed. It appears that on the morning of the 17th of February last, Willis's son went to the fold, which contained seventy-two very fine ewes heavy in lamb. He discovered a large wiry-haired lurcher in the fold, and two ewes dead; the dog came growling at him, but after pelting him with stones, he made off towards Nettlebed. Willis and his father then found that two more sheep were so greatly torn by the dog that they were compelled to kill them; the four ewes had seven lambs when opened. It was further discovered that about twenty more were bitten, more or less, about the nose and ears. These they dressed, and put in a fold by themselves; but two or three weeks afterwards, several of them began to show symptoms of madness, and fifteen of them lambed, the lambs being brought up by hand. The ewes that went into a rabid state, trotted backwards and forwards by the sides of the fold, and repeatedly bit at the hurdles, and tore mouthfuls of wool out of each other, foamed at mouth, &c. Twenty-two are since dead, and there are five more that were slightly bit, which no doubt will also die before many days. The mad lurcher afterwards attacked two dogs, which were soon shot; it next ran to Mr. Corderer's farm at Lashbrook, and fell on his dogs; but that gentleman, suspecting the dog to be mad, shot him, and then his own dogs, and consigned their bodies to the river Thames."—*Reading Mercury*.

EXPERIMENTS ON THE TRANSMISSION OF RABIES.

"M. LECOQ inoculated, at the Veterinary School of Lyons, on the 23d of September last, two dogs; the one with the saliva, and the other with the bronchial mucus of a man who had fallen a victim to hydrophobia at the Hôtel Dieu. The latter dog died very lately, without any outward signs of the disease, though presenting some of the post-mortem appearances of animals which die of rabies. The former is now alive, and presents nothing particular. From these facts, M. Lecoq is inclined to think that rabies is transmissible from man to animals; though he is far from venturing, as yet, upon a decided opinion on the subject."

EXTRA-UTERINE FŒTUS.

MR. TRUCKLE, M.R.C.V.S., Salisbury, has sent us an extra-uterine fœtus from a sheep, accompanied with the following note:—

To-day, May 16th, a friend of mine, a butcher, called to me as I was passing by, and he said that he had something to show me. It was a lamb of good size, and which you will also see is perfect in form. He told me he had just taken it from the abdomen of a fat sheep, enclosed in a bag, and attached to the rumen. On opening the abdomen in the usual way, he thought that it contained a tumour of some kind. The uterus, which I likewise send, is very small, but seems perfect. I saw the sheep after it was killed, and it was a very fat one. The case appears to me to be somewhat remarkable, and therefore I have troubled you with these few particulars.

[The lamb, as stated by Mr. Truckle, was a fully formed animal. Its integument, however, was imperfect in places, and had seemingly been forcibly detached from an investing membrane; in other parts it was entire and covered with wool. The uterus did not exceed in size that of an animal that has been but once impregnated, and its coats gave no evidence of having been ruptured.]

 EPIZOOTIC AMONG SHEEP.

In the eastern provinces of Russia, a very fatal disease has broken out among the sheep, arising no doubt from the bad harvest of the previous year, which occasioned a want of fodder. The sheep are dying in such numbers that the price of wool has, in consequence, much risen.

 OCCLUSION OF THE EYES IN DISEASES OF THESE ORGANS.

By M. BONNAFONT.

THE *Académie de Médecine* has been engaged in a very long discussion upon the usefulness of the occlusion of the eyes in cases of diseases of these organs. The originator of this discussion is a military physician, M. Bonnafont, who thought, when he made his first communication to the Academy, that the occlusion of the lids was the best means of treatment for almost every kind of ophthalmia. He states,

that eighteen patients treated for purulent or simple ophthalmia, general or partial, have all been cured in about thirteen days.

M. Hipp. Larrey, who had long before M. Bonnafont employed the same means, thinks that the cases where it may be useful are the following:—In mechanical injuries to the globe of the eye, such as wounds, contusion, and commotion; ophthalmoptosia, exophthalmia, congestion, hydrophthalmia, and the different kinds of ophthalmia. The occlusion of the eyelids is particularly important in cases of ulceration of the cornea, of kerat-odei-tis, of staphyloma, and diseases of the iris.

Professor Velpeau does not agree with his colleagues as to the efficacy of the occlusion of the eye. He states, that by other modes of treatment a cure is as quickly obtained, if not much quicker, than by occlusion. He admits, nevertheless, that sometimes occlusion may prove useful, as, for instance, in cases of conjunctivitis and kerat-odei-tis, and after wounds of the globe of the eye.—*Medical Times and Gazette*.

ON THE EXTIRPATION OF THE SUPRA-RENAL CAPSULES.

By Dr. BROWN-SEQUARD.

IN a recent communication to the *Société de Biologie*, Dr. Brown-Sequard it appears has almost completed the exposition of the results of his researches upon the physiology and pathology of the supra-renal capsules. He has found that the extirpation of the two capsules in dogs, cats, rabbits, and guinea-pig is a cause of very rapid death. In rabbits the average duration of life after this operation is 9 hours; out of 25 animals of this species, only 1 survived 13 hours, and almost all lived 8, 9, or 10 hours only. In adult dogs and cats the average length of life has been 14 hours, and the greatest period has been 17 hours. In newly born kittens life lasted, in one case 38 hours, in a second 49. After the extirpation of only one of the supra-renal capsules, life lasted 15 or 16 hours, on an average, in rabbits and guinea-pigs, and 27 hours, on an average, in dogs and cats.—*Medical Times and Gazette*.

ON A SUPPOSED NEW SPECIES OF THE GENUS EQUINUS.

THE Empress of the French has recently received as a present from the Viceroy of Egypt, and presented to the Menagerie of the Jardin des Plantes, two specimens of an

Equine animal, which M. Geoffroy Saint-Hilaire considers to be a new species. It belongs to the section of the great *Equus* of which Dr. Gray has formed his genus *Asinus*. It is most nearly allied to the Djiggetai (*Equus (Asinus) Hemionus*), but differs from that species in the smaller size and better shape of the head, its shorter ears, and its tail partially covered with long hairs. It thus appears to be intermediate between the Djiggetai and the Horse, for which reason M. Saint-Hilaire proposed to name it *Equus hemippus*. Its colour is the same as that of the Djiggetai, and, like that species, it has a blackish mane and dorsal line. It is supposed to be a native of the deserts of Syria between Palmyra and Bagdad.—*Comptes Rendus. Magazine of Natural History.*

Extracts from British and Foreign Journals.

ON ANTIMONIAL POISONING.

A PHYSIOLOGICAL AND EXPERIMENTAL STUDY.

By BENJAMIN W. RICHARDSON, M.D.

As it is my intention, in the following essay, to endeavour to dig up a little new ground on the subject of antimonial poisoning, rather than to recall attention to observations already recorded in the literature of medicine, I shall refer to but one or two matters of an historical kind.

Antimony, as a medicinal or a poisonous agent, seems to have been first supplied to the world by the alchemists towards the close of the fourteenth century. It was known to the Greeks and the Romans under the name which it still maintains in chemical language—viz., stibium; and as a metal many remarkable chemical properties were attributed to it. Basil Valentine, a German monk, first drew attention to its medicinal qualities in a work entitled ‘*Currus Triumphalis Antimonii*.’ Valentine lauded some preparation of antimony, which he had himself invented, as a specific for almost every form of disease; but owing, possibly, to the extent of this pretension, he did not succeed in establishing its claims. The origin of the term antimonium is said by Dr. Mayne, who follows Dr. Pereira in this matter, to be, “*ἀντί*—for or against—and minium—vermilion, because used by females in aid of the rouge used for heightening the complexion.” I do not know from what data this derivation is obtained, but cer-

tainly it is not the one handed down by history. The tradition regarding its name is connected with Basil Valentine aforesaid, who, having, we are told, observed that a preparation of antimony, thrown to some hogs, first purged them, and then made them grow fat, thought it would be at once an interesting, scientific, and perhaps humane experiment, to see whether it would have a similar happy effect on the sacred wearers of the cowl and cross. With these excellent intentions, and reserving his own person for after research, he dosed his fellow-monks in the same manner as he had seen the pigs so successfully treated. Such, however, was the perversity of human nature, or such the error of the *experimentum crucis*, that the result, as often occurs in experimental inquiries, was not in strict accordance with *à priori* reasoning. The monastic constitution, reduced, no doubt, by prayers and long fasts, rebelled against such strong food. It was death that fattened on the experiment, not the monks, the whole of whom died after tasting the promising potion, leaving the bereaved Basil to write ultimately his ‘*Currus Triumphalis Antimonii*.’ Hence, says tradition, the origin of the name—*ἀντί*—against; *μοναχός*—a monk,—the stuff that would not agree with the monks—*antimony*.

About a hundred years after this event, the famous Paracelsus re-introduced antimony into the medical world. But it was received with disfavour, and the Parliament of Paris, deeming it a dangerous poison, passed a law against its use as a medicine; and Besnier, a Parisian physician, was positively expelled the faculty for so employing it. At last it was recognised as a medicinal agent, and in 1637 it was entered in the State Register of Medicines of Paris, classed under the head of “Purgatives.”

The most violent opponent of antimony about this period was one Gui Patin, a distinguished physician and professor, who, in the Royal College of France, succeeded to the chair of the famous Riolan, to whom our Harvey wrote his immortal disquisitions. Gui Patin’s tirade against antimony is embodied in his letters, and is entitled the “Martyrology of Antimony.” He herein drew out a list or register of the persons who had been killed by the physicians with this remedy, and said very many bitter things in support of his arguments.

But when once introduced fairly into medicine, the virtues, real or supposed, of the new drug soon outdid all the clamours raised against it, and in one or other of its preparations it has retained its reputation to the present day. At various times, various forms of antimony have been medicinally used. At

one time, after being melted and cast into cones, the metal itself was thrown into diet drinks and herbal decoctions, as a remedy against scurvy. There was once in vogue "an antimonial cup," made of glass of antimony—an impure oxide, which was said to confer a purgative property on every liquid that was placed in it. The sulphuret, the chloride, the oxichloride, the oxide, and many other forms, have been received also with great favour. We have in this day accepted the tartrate of potash and antimony as the most active and available compound. It has the advantages of being cheap, soluble, tasteless, and decided in its effects.

The physiological properties of antimony have been variously classified and commented on by different writers. At first it was mainly approved of as a purgative, then as an emetic, then as a diaphoretic and diuretic. At one period it was considered a specific in acute mania, at another time it had great reputation as an anti-scorbutic. Cullen classed it amongst the "stimulants;" modern authors have set it down as a powerful "sedative." These are but words, very useful to the mystics.

The popularity of tartar emetic in modern days for the cure of inflammatory affections is in great part due to Laennec, who prescribed it boldly, and with great success, in pneumonia. The profession has recognised it as a safe medicinal agent, and consider that they have at command all its peculiar properties, which they can bring out according to the dose they prescribe. This is generally correct; but one does now and then in practice meet with cases where the results are anomalous. I have recorded one case in which three grains of this salt induced symptoms which nearly proved fatal; and another case in which fifteen minims of the wine produced serious depression for several days. The causes of these departures from the general rule remain for explanation.

Doses of antimonial poisoning ending fatally are either extremely rare, or the effects of the drug have been so overlooked, or misunderstood, that death from antimony has been attributed to death from disease. If this latter error has really been committed, it has been a serious one indeed; for the number of times that antimony is prescribed must be incredible. Looking back at my own career for the last eight or nine years, I compute that I have prescribed antimony, often in full and frequently repeated doses, to at least two thousand persons. I instance this, simply to prove how important it is that we should possess sound physiological views regarding the true *modus operandi* of this much-used drug.

Speaking from general observation regarding the effects of antimony on the body, I have always inferred that it is a safe medicine. I have seen all its effects. I have seen it act as a purgative, as an emetic, as a diaphoretic, and as a diuretic. I have watched its effect in depressing the circulation; and, in one instance, in the case of an Essex farmer, suffering from acute pneumonia, and who took half a grain of tartar emetic every three hours for six days, I witnessed the peculiar eruption on the skin which sometimes appears. The body was so generally covered with pustules, that the friends of the patient mistook the eruption for smallpox—a natural error. But in all these observations, which run current I doubt not with the experience of my professional brethren, I have never, except in the two instances described above, suspected that the drug was exerting any other than a curative effect. When the medicine has purged, I have usually observed that the skin was dry, and have accounted for the purgation by supposing that the abundance of one excretion was the result of the partial suppression of the other—a fair physiological inference.

When fatal cases under antimonial treatment have occurred, the result, if I have not been deceived, has been due to the disease, not to the remedy. If I have been deceived, the error has arisen from the fact that antimony sets up an under-current of symptoms which have not been, as yet, understood or explained.

The symptoms usually laid down as specific evidence of antimonial poisoning are such as arise from the administration of the drug in a large dose—say from ten to forty grains. Few cases of this kind have been recorded, and the greater part of them are collected by Dr. Taylor in his ‘*Medical Jurisprudence*.’ The leading features of these cases were vomiting, purging, spasms—symptoms, in a word, analogous to those of cholera.

The pathological lesions were, injection of the peritoneum; an inflamed aspect of the duodenum; a whitish-yellow viscid secretion throughout the alimentary canal; intense redness of the stomach, in the course of the greater curvature, but without ulceration; great vascularity of the brain. In one case there was effusion into the right pleura; the lower lobe of the right lung was redder than usual. These symptoms and pathological lesions were the results due to the administration of one large and fatal dose. They are, comparatively speaking, easily accounted for.

But may antimony prove fatal in a more insidious way from small and continued doses? That is the great point for inquiry.

It is obvious that, to learn any new fact under this head, we must fall back upon a system of rigid, unbiassed, and laborious physiological research of the comparative kind. From the diseased subject, under antimonial treatment, we can never eliminate fairly and rigidly the true influence of the medicine on life; for the symptoms of the disease complicate the symptoms produced by the medicine, and the pathology of the disease rubs out the pathological characters induced by the drug.

The physiological facts which we at the present time possess regarding the effects of antimony are very limited. Pereira sums them up in his peculiarly comprehensive and masterly style. Herbivorous animals bear larger doses, as it would seem, than animals of the carnivorous or omnivorous kinds. Magendie found that tartar emetic produced the same effects, when thrown into the veins, as it did when given by the stomach. He considered that its chief action was confined to the intestinal canal and lungs. Traces of pneumonia, gastritis, and enteritis were found after death. Rayer, Bonnet, and Campbell found no such lesion of the lungs. Orfila has detected antimony in the viscera of animals to whom it had been given by the mouth. In further experiments also recorded by Orfila, and referred to with great effect by Dr. Webster, in a letter to the *Lancet* of January 26th, it is stated, on direct experiment, that antimony may be found in some of the animal tissues at periods of three, and even four, months after it has ceased to be administered.

These details, with the addition of one or two others, in which it has been shown that ligature of the œsophagus increases the depressing effects of the antimony, and that division of the pneumogastric nerves checks the efforts to vomit, comprise almost all that has been done, in the way of direct experiment, on the subject of the physiological action of antimony.

Under such circumstances, I have thought that it would of necessity be a rich and useful study to make a careful experimental inquiry, of a physiological character, into this wide and open field of research. The points which seem to require closest investigation are as follow:—

1. By what surfaces may antimony be received into the body?
2. Its diffusion throughout the system, and its election by different organs.
3. The mode of its elimination, and the periods at which it is eliminated.
4. The physiological changes, or, in other words, the pathological conditions, to which it gives rise.

5. The modes in which it destroys life, when it acts as a fatal poison.

6. The chemical changes which it itself undergoes in the organism, and the special effects of its different preparations.

For the purpose of instituting a basis of illustration and argument on each of these inquiries, I pass now direct to the detail of experiment.

EXPERIMENT I.—*Injection of Tartar Emetic into the Cellular Tissue.*—A large dog, in good condition, was selected for experiment. I took up a small fold of skin in the abdominal wall on the right side, and made an incision through it with the point of a scalpel, sufficiently large to permit of the introduction of a small canula. The canula was pushed easily into the cellular tissue beneath, and through it one drachm of tartar emetic, in solution of two ounces of distilled water, was gently injected with a glass syringe. The salt used was proved, by previous experiment, to be free from arsenic, and was obtained pure for the purpose. The whole of the solution passed readily under the skin, and the operation gave but little pain. On withdrawing the canula, a cross-stitch was passed through the wound, and none of the fluid escaped. The injured part was carefully swathed over, so that the animal could not lick it, and he was closely watched. He made no attempt in this direction, and indeed paid no attention the wound. For the first half-hour after the operation no peculiar symptom was observed; the animal moved about cheerfully, and evidenced no sign of pain or inconvenience. At the end of this time, he shivered, and immediately afterwards vomited freely. He now became slightly prostrated, and in the succeeding half hour made numerous attempts to vomit, in some of which efforts he threw off a mucous fluid and solid matters. He also passed flatus freely and frequently from the bowels, and was once briskly purged. At the expiration of an hour, the body had become quite powerless, the limbs were cold, the breath was cold, the pulse and the respirations were greatly reduced, and death was slowly taking place. There was no spasm, no expression of pain, but rather a comatose sinking, without further evacuations of any kind. Death supervened just one hour and forty minutes after the operation, the respiration becoming gasping at last, and outliving the heart's action for full three minutes.

Post-mortem examination.—The body was opened twenty hours after death. Dr. Herbert Barker, of Bedford, to whom I am indebted for much laborious assistance in this inquiry, was present. There was marked cadaveric rigidity. On laying bare the part where the cellular tissue was injected, slight

traces of fluid were found diffused over a space of about the size of the palm of the hand, but there was no special mark of redness. The particular appearance of the internal organs was an intense congestion. The large venous channels were distended to the last degree; both sides of the heart were distended; the aorta was full of blood. The lungs were inflated, dark, and full of blood; but showed no traces of inflammation. The bladder was empty; the kidneys were of a dark purple colour. The blood generally was fluid; but in the left auricle there was a small separation of fibrine lining the cavity or modelled to it; the gall-bladder was full of bile, and the liver dark. The whole of the alimentary canal was carefully examined; but the only peculiarity of the mucous coat was in the stomach, the inner surface of which, along the larger curvature, for the extent of a space two inches long and one and a half broad, was of a bright pink colour, contrasting strikingly with the surrounding parts. The stomach contained about an ounce of a clear fluid, slightly yellow in colour; the intestinal canal was coated thickly with a glairy buffy-looking mucus, but contained no solid matters. There was no ulceration at any point of the alimentary service.

Chemical analysis.—The parts reserved for separate analysis were the vomited and purged matters, the contents of the stomach, the stomach itself, the rectum, the lungs, the heart, the liver and spleen, the blood collected from the large veins, heart, and aorta (five drachms), the small intestines, the contents of the intestines, the bladder, and kidneys.*

The results of the analyses, which were qualitative only, were as follows:—The blood yielded abundant evidence of the poison more than any other part; the vomited and purged matters gave a considerable amount; the rectum a considerable amount, but less than the vomited matter; the lungs less than the rectum, but considerable; the liver less than the lungs, but considerable; the stomach less than the liver, but considerable; the bladder and kidneys less than the stomach, but considerable; the small intestines less than the bladder

* It will save time to state in this place, that in these first chemical analyses I have trusted mainly to the hydrogen test, which, when worked with due care, is at once the most direct, simple, and certain process. In applying this test, I have, however, used a larger apparatus than that of Marsh, but constructed on the same principle. I have thus been able to keep up a long-continued flame from the jet, and to detect the presence of the antimony with great minuteness. In every instance the purity of the chemicals has been rigorously tested as a preliminary step. In some experiments, Reinsch's test, and the sulphuretted hydrogen test, have been resorted to, but only for corroborative evidence. Orfila, in his experiments, used the hydrogen test with equal success.

and kidneys, but also considerable. The contents of the intestines gave the same amount of evidence as the intestines themselves. The contents of the stomach yielded distinct traces, but little in proportion to the other parts. This arose from the fact that the amount collected for analysis was very small, the stomach having been emptied during life by the vomiting.

In this inquiry sixteen analyses were made. The blood seemed to be the principal seat of the poison.

EXPERIMENT II.—*Inhalation of Antimonuretted Hydrogen Gas.*—A store of antimonuretted hydrogen was made, by adding to diluted sulphuric acid and zinc, six drachms of tartar emetic in a Wolf's bottle. The gas was collected in the usual way. All the chemicals used were tested previously, and found to be free from arsenic, and in all respects pure.

A young dog was now placed in a glass chamber, capable of holding 3000 cubic inches of atmospheric air. The chamber was air-tight; but an opening, armed with a stopcock, was fixed in the top, for the admission of the gas, while another opening in the bottom, secured with a water-valve, was so arranged that the introduction of the gas should lead to a displacement of air, to an extent equal to the amount of the gas introduced. After the animal had become quiet, 100 cubic inches of the gas were slowly thrown into the chamber, and this operation was repeated every twenty minutes so long as the experiment continued, 100 cubic inches of pure air being driven in with each dose of the gas. In the atmosphere thus modified the animal lived three hours and fifty minutes, in the course of which time 1000 cubic inches of the gas were passed into the chamber, with the same quantity of fresh air, which was introduced to prevent the complication that might arise from carbonic acid.

For one hour and forty minutes after the inhalation no peculiar symptom at all was presented. But at this time the animal suddenly became copiously purged, without any evident pain. The evacuation was fluid and dark. Ten minutes later the breathing became quicker, running up from thirty to forty-eight respirations per minute. Ten minutes later there was copious vomiting. During the succeeding half-hour the respirations fell to thirty-six per minute, and the animal reclined in a prostrated listless state, making no further efforts either to purge or to vomit. When spoken to, he rallied up briskly, and showed no evidence of pain, but decided prostration. The respirations now began to fail, and gradually sunk. Three hours and forty-five minutes after the commencement of the operation he seemed to have ceased

to breathe, the action of the heart had stopped, and I thought he was dead; but at intervals of one minute and a half, he made three several gasping inspirations, and then altogether ceased to exist.

The post-mortem examination was made forty-one hours after death. Dr. Snow lent me his kind assistance. The cadaveric rigidity was not well-marked. As in the previous case, the most striking pathological symptom was intense congestion of all the viscera, and of the bloodvessels. The blood, as before, was loosely coagulated, and about half an ounce was collected for analysis. The lungs were inflated, but full of blood. The bronchial surface was pale, but coated freely with a frothy mucus. The lungs showed no sign whatever of inflammation. The heart was charged with blood on both sides, and the aorta was full of blood. The brain was congested. The liver and kidneys were also congested. The stomach contained about six drachms of a clear fluid. On its inner surface, and in the course of the large curvature, there was the same kind of redness as in the previous case, and mapped out in a manner almost identical. The intestines contained a thick white glairy mucus, but no solid matters. Their mucous coat was nowhere injected, and there was no ulceration at any point of the alimentary surface. The bladder was full of urine. The pleural cavity contained six drachms of a pinkish serum, which, on being poured into a test-tube, coagulated firmly into a jelly-looking coagulum, from which clear serum exuded.

The parts chemically examined are indicated in the following results of the analyses :

The liver yielded abundant evidence of antimony, more than any other organ. The vomited and purged matters yielded abundant evidence. The contents of the stomach gave abundant evidence. The stomach itself, which had been well washed prior to the analysis, yielded a bare trace. The brain yielded no trace. The heart yielded no trace. The blood gave distinct evidence, but not so marked as in the previous experiment: four drachms were obtained for the analysis. The lungs gave well-marked evidence, but much less than the liver and the excreted matters. The intestines and their contents, taken together, yielded abundant evidence. The kidneys and bladder gave slight traces. The urine gave abundant evidence. The secretion in the pleural cavity yielded distinct evidence. It seemed that in this instance the liver was the principal seat of the poison at the time of death.

It should be remarked, that in this experiment the animal

was placed under the influence of hydrogen gas, which is a narcotic of a low power—perhaps, indeed, only a negative narcotic, like nitrogen. The presence of the hydrogen could not, however, have had much influence, as nothing like deep sleep or insensibility was observed during the time of the experiment.

EXPERIMENT III.—*Introduction of Tartar Emetic by a Wound.*—At my request, Dr. Barker of Bedford, performed the following experiment: From the back of the neck of a full-sized dog, the hair was removed for a space of the size of the palm of the hand; a crucial incision was made in the part, and the wounded surface was dressed with tartar emetic ointment, made by mixing up an ounce and a half of the salt with four ounces of lard. The wound was dressed with this ointment every morning for seven days. The application gave rise to but little local mischief, except that the temperature was slightly raised, and that a slight oozing of matter took place from a point removed a slight distance from the wound. From the time of the first dressing, the animal lost appetite, but throughout was neither purged nor vomited. He refused food, became gradually thin and exhausted, and died as from inanition, without any other remarkable symptoms.

The dog was sent to me directly after death: I examined him seventy-two hours after the fatal result. The cadaveric rigidity was well marked. In this, as in the preceding cases, intense congestion of the internal organs was the most striking general appearance of a pathological kind. The blood was fluid, and such few clots as were met with were loose and dark in colour. The heart was filled with blood on both sides: the aorta was full of blood. The lungs were inflated, of a pink colour, and much less free from congestion than the other organs. There was no indication whatever of pulmonary inflammation. The bronchial membrane was healthy. The liver was congested; the spleen natural. The stomach contained ten drachms of a very dark, thick, bloody looking mucus. The inner surface of the stomach had the same red appearance seen in the before-named cases, mapped out much in the same manner, and situated in the same locality. There was no ulceration. The intestines held no solid matter, but were thinly coated with a bloody mucus, like that in the stomach. The whole of the intestinal canal was injected, and the colon and rectum presented bloody spots as from a rupture of the minute vessels, but there was no actual ulcerated spot. The kidneys were of a purple colour from congestion. The bladder was full of urine.

The results of the analysis in this case were as follows:—The brain contained no trace of the poison. The lungs gave marked evidence of its presence. The heart gave very abundant proof of the presence of the poison. The blood yielded only traces (seven drachms was the amount acted on). The contents of the stomach (ten drachms) yielded abundant evidence. The stomach itself, after being washed, yielded distinct evidence. The liver and spleen yielded a much greater amount than any other structure. The kidneys yielded distinct evidence. The urine gave distinct evidence. The rectum gave abundant evidence. The contents of the intestines gave distinct evidence. The intestines themselves gave distinct evidence. The soft parts of the back of the neck, at the point where the antimonial was applied during life, yielded the barest trace of antimony.

In this experiment we see that antimony, received slowly into the system, may cause death—may be present in almost every organ, and yet may not excite, during the lifetime of the animal, any of the symptoms of vomiting, purging, and spasms, which are ususully set down as the specific signs of antimonial poisoning.

The liver, in this instance, was again the chief depot of the poison.—*The Lancet*.

ON THE POISONOUS PROPERTIES OF BRINE.

“M. REYNAL lately read to the *Académie de Médecine* an interesting Memoir on the poisonous properties of brine. Everything which can throw any light on this important subject should be collected; we shall therefore give an extract from a note published with the initials, Dr. B. S., and who makes known some new facts on this subject.

“M. Adam, municipal veterinarian at Augsburg, tells us that in one establishment in that town, thirteen pigs were kept, whose ages varied from six to eight months; they were put by twos and threes, in very well-constructed sties, and fattened with the residue from a brewery mixed with water. This food especially agreed with the older pigs; all ate it with appetite, even when this sweetish substance had become slightly fermented by heat in the month of March.

“On the 29th of last April, the meat from fifteen pigs was taken out of the brine in which it had been salted, and the residue, consisting of about fifteen quarts of brine, was poured into the tub in which the food for the pigs was always mixed.

"The next day, the man who attended to them observed that two of the pigs, in different sties, showed very little appetite, although they continued lively. By noon of the same day all the pigs had lost their appetites. At 1 o'clock, when M. Adam was called in, four were in a state of decided vertigo; they were sitting on their hind legs like dogs, supporting themselves on their front legs, which were wide apart, and they made motions of mastication, which caused foam to appear on their mouths; then came on strong convulsions, they fell on their sides, and their legs stiffened with short spasmodic actions. In a short time this ceased, the pigs rose, slowly changed their places, keeping their heads down; the vertigo continued with such intensity that they struck their heads against the wall. After an interval, varying in different animals from half an hour to an hour and a half, the same paroxysms returned with increased violence, and continued slightly, even during the intervals of the convulsive movements. At length they could no longer rise, their respiration was calm and deep, and they uttered no sounds of complaint; the skin assumed an uniform tint, showing no marks either red or blue; the temperature was natural and uniform; the mucous surfaces of the mouth and nose were of a pale pink; the eyes were bright, the pupils dilated, the sounds of the heart were weak, and the pulsations 24 in the minute; there were no longer any alvine dejections; the hind part was much sunk down.

"The animal which appeared the worst was killed by the section of the carotid; the blood was dull red, it coagulated rapidly; the clots separated distinctly from the serum, which was of a dirty white and shining; the muscular flesh was firm and of a reddish brown; the fat was a beautiful white; the stomach was much distended by a thick mass of chyme; the mucous membrane, which was a dirty white, covered towards the pylorus with grey, greenish, yellow pus, presented some red stains; in the duodenum the mucous membrane was likewise stained with red patches; the large intestine contained solid hard matter; even in the rectum the mucous membrane was dry, and covered with a gluey matter. The liver, spleen, kidneys, and bladder, were healthy. The lungs were bright, red, and crepitating; the heart contained a very little coagulated blood; the sinus slightly distended with blood; the cerebral substance much infiltrated, presenting here and there a sandy aspect, and appeared less consistent in its substance than in the normal state.

"Two more pigs were taken ill on the same day, and killed with the four others, when there was no longer any hope of

saving them. The examination of the dead bodies showed the same condition in all; the peculiarities in the blood and dryness of the mucous membrane was unfailing.

"The meat of these pigs, which looked quite right, was eaten by several persons, both fresh and salted, and produced no accident.

"The seven other pigs, among which were the five oldest, did not present such alarming symptoms, although all lost their appetite for some days.

"The treatment used was first a vomit of stibiated tartar and white hellebore; then, injections were used; only two of the pigs vomited; but the greatest benefit was obtained by bathing them all over with cold water.

"The German veterinarian has, moreover, observed that the cases of poisoning with brine which he has met with have always occurred in hot weather, although meat is more often salted in the autumn and winter. He thinks that this is an argument in favour of the theory which attributes the poisonous nature of brine to the presence of a fatty acid engendered under the influence of heat."—*Moniteur des Hôpitaux*, No. 133; *The Chemist*.

NEW TEST FOR NUX VOMICA.

THE following test proposed by Vielguth, and approved by Wittstein, for detecting nux vomica recommends itself for its simplicity:—A few grains of the substance supposed to contain nux vomica, is treated with proof spirit. The tincture thus obtained is evaporated to dryness on a water bath at a temperature of about 95°. To the residue a drop or two of dilute sulphuric acid is added. The whole is again exposed to the above-mentioned temperature, when, if nux vomica is present, a beautiful carmine-red colour ensues. If the heat is stopped in the course of ten or fifteen minutes, this colour disappears, but it will reappear, although of diminished brightness, by a renewal of the heating. If the temperature be increased, the colour becomes reddish-brown, and finally black, in consequence of the separation of carbonaceous particles.—*Reports of the Progress of Chemistry, by W. Bastick, Esq., in the 'Lancet.'*

THE VETERINARIAN, JUNE 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE ANNUAL MEETING OF THE VETERINARY PROFESSION.

IN another part of our Journal we give a Report of the Twelfth Annual Meeting of the Royal College of Veterinary Surgeons, which was held on Monday, May 5th, at 10, Red Lion Square, "in accordance with the provisions of the Charter." There were present several members of the profession, both from town and country, but a far less number than we were wont to see at the early meetings of the College. This apathy on the part of the profession may strike with surprise those who take an interest in the advancement of veterinary science, and who see in its improvement a powerful means of lessening the daily losses our national wealth is sustaining, by the adoption of means to prevent, as well as to alleviate, the diseases to which our domesticated animals are liable. We think, however, that an explanation of the fact—whether a satisfactory one or not—is to be found in the present disjointed state of the profession, and the few efforts that have been made to effect a reconciliation between opposing interests. "Union is strength," is a truism so often quoted, that were it not professedly the principle which regulates the actions of the Council, as exemplified by its motto, *Vis unita fortior*, we should hesitate to adopt this axiom in any comments we might deem right to make on its proceedings. That the accomplishment of many designs can only be effected by the union of interests which may be somewhat antagonistic, will, we doubt not, be admitted; and when the object sought is both legitimate and beneficial, such a union is demanded, and all who labour to promote it merit our thanks, and would themselves hail with delight its fulfilment. Have not

the interests of the profession, we would ask, been jeopardized to the groundless fear, that if justice were done the pupils, on their admission into the body politic, by a reduction of the examination fee, the income of the College would be too much diminished to meet the requirements of the Council? And further, was not the exaction of this fee, raised at the outset to the utmost limit allowed by the Charter, the chief cause of the original differences between the schools and the Council? If these things be true, then, it is apparent that the Council must come to them as to a centre of new action, and the sooner this resolve is taken the better. We are unwilling to admit that the income of the College would even temporarily suffer by a reduction of the fee, and we are assured that ultimately it would be greatly benefited. To meet any inconvenience that might arise, let some of the expenses of the establishment be diminished for a time, and this could be easily done, and in more ways than one. Who can calculate the extent of injury we are daily sustaining, as a profession, by the continuance of the present state of things? Is it to be any longer tolerated that graduates and non-graduates are to be placed on an equal footing in all that concerns appointments and emoluments, or that the profession is to be deprived of its power of obtaining immunities and privileges, and principally by the ill-judged course of those who are the appointed guardians of its rights? Men in such a position are not to trifle with the interests committed to their keeping. Vain would it be for us, under existing circumstances, to go to the government seeking privileges, as again we should be told: "Gentlemen, first agree among yourselves; heal your differences, and then come to us for what you require." We would warn such, if any there now be, who would desire to form a party to resist the adoption of measures so just and wise as those we have alluded to. The day of retribution is sure to come, and come to with a force which will prove irresistible. The profession will yet be roused from its *seeming* apathy, and hurl from power those in whom it has hitherto trusted. We use the expression *seeming* apathy advisedly, for we well

know the growing discontent which exists, and that this, although now apparently dormant, is but gaining strength by rest, and that ere long it will awake and come forth like a giant refreshed with new wine.

We write plainly, and therefore we ask the reason why the future members of the body politic are to be mulct to an extent equal to one half of the educational fee at the London, and two-thirds of the same fee at the Edinburgh School, to keep intact a Charter from which little or no advantage is derived? That the Charter has signally failed in accomplishing the great and laudable designs of its promoters, is so patent, that no arguments are needed to support the assertion; but were any required, we have them to the full in the Annual Report of the College, or rather in the "Abstract of the Proceedings," as the Council is pleased to term it. The account here given of the matters on which it has deliberated is so meagre, that all who read it must be ready to exclaim, —What, is this all that has been done for an expenditure of upwards of four hundred pounds in one year, and that too wrung from the pupils, or rather from hard earnings of their parents, many of whom have to labour early and late to find the necessary funds for the support of their sons during the period of their collegiate education? This expenditure, however, gives but a faint idea of the amount received, for a glance at the treasurer's report will show that no less a sum than £572 5s. found its way from the pockets of the students into the coffers of the College. For what purpose is the College accumulating funds, if it be not to do justice, tardy although it is, to those whose interests we have ever advocated, and to effect thereby the cordial co-operation of all parties?

To return to the Report, we are told that the Council, taking advantage of "peace within its own walls," adopted certain resolutions which were deemed expedient "to overcome the differences which had so long existed between the body corporate and the Edinburgh College." This was a step in the right direction. It had our cordial support at the time; and glad should we have been could we have

congratulated the profession on its success. Why did it fail? Because the Council—on the receipt of a very business-like letter from Professor Dick, in which he stated “that when a *distinct* proposal was made to him, he would lay it before the Directors of the Highland and Agricultural Society”—went off at a tangent, and declined to confirm its former resolutions. Thus, at one and the same time a great injustice was perpetrated towards the pupils, and the golden opportunity of effecting a union of the profession lost, and which we fear will not return for many a day. We would not, however, deny that our friends in the North have required more formal proceedings on the part of the Council to effect the desired end, than it is wont to give to its general transactions, and, probably, more than they would have asked for, had a spirit of peace pervaded their actions throughout. We do not, however, advance this in extenuation of the Council, but as an argument to show that if it is the true representative of the profession, and alive to its best interests, then it should not take umbrage at little things, but labour early and late “through evil report and good report,” to accomplish the great end of its *own* existence. The President, doubtless, felt this, when, in acknowledging the vote of thanks unanimously accorded him for the attention he had given to the interests of the college, and the liberality he had displayed during his two years of office, he said, “I really do not know what is to be done if your next president cannot bring into the field more influence than I have succeeded in doing, and be thus enabled to secure a larger attendance at this meeting, which is the true rallying point of the profession.”

The same sentiments, also, pervaded the minds of most of those who were present at the dinner in the evening, and one whom we regard as being likely soon to fill the presidential chair, remarked,—“this is a meagre affair, either as an effort at unity, or to keep up the importance of the profession; and I hope it will go forth to the world that, with few exceptions, we meet in diminished numbers year by year.”

We write in no censorious or unfriendly spirit, our object

being simply to show that the existing state of things cannot continue, and that all well-wishers to the science of veterinary medicine, must forthwith determine to do their best, not in name only, but in deed and in truth, to effect its onward progress and due appreciation. We have more than once alluded to the influence of party spirit in the deliberations of the council, and we are not unmindful that we have incurred the displeasure of some by so doing. The truth, however, must be told, regardless of the consequences, and as public and independent journalists, we are resolved that it shall not suffer at our hands. How often have we seen men tied and fettered by party, enter the council-room with their minds fully made up as to how they should vote; and, as such, they would listen to no argument, nor be open to any conviction, not in accordance with the preconceived views of those with whom they acted! We do but our duty to the profession by thus pointing out the shoals and quicksands upon which our little bark has drifted; and if she again floats with a rising tide, like the sentinel on the watch, we shall raise the cry of "breakers a-head" ere she founders on the hidden rock of secret party.

APPOINTMENT OF A NEW EXAMINER.

A VACANCY having occurred in the Court of Examiners, by the resignation of Mr. T. W. Mayer, the Council of the Royal College of Veterinary Surgeons, has thus been called upon to exercise one of its most important functions; and requiring the services of a country practitioner, conversant with the diseases of cattle, it has selected to the vacant seat, Mr. H. Lepper, of Aylesbury. Our readers will recollect that a short time since, we drew attention to the necessity of adopting some plan to secure the services of those most fitted to discharge the important duties of examiners. Little, however, has been done to have "the right man in the right place;" the Council in this as in other matters halting between two opinions, and hesitating to take a bold and judicious course—still we can congratulate the profession on

Mr. Lepper's appointment, because we believe that there are few among us who are better able to practically examine the pupils on the Pathology of Cattle, and none who will labour more earnestly to fit himself for the responsible duties of his position.

ROYAL COLLEGE OF VETERINARY SURGEONS.

At the Annual General Meeting of the Profession which took place on May 5th, at 10, Red Lion Square, there were present: — Messrs. Austin, Batt, Bowles, Broad, Brown, Burley, Cherry, Cooper, Dickens, Ernes, Field, sen and jun., Henderson, Jex, Jones, Legrew, Lowe, Megennis, Moon, Morton, Pritchard, senior and junior, Robinson, Silvester, Simonds, Stockley, Wallis, Wilkinson, Woodger, sen. and jun., and the Secretary.

W. FIELD, Esq., President, occupied the Chair.

The chief business of the day consisted in the election of six members of the Council, in the place of James Turner, Jno. Legrew, Richard Pritchard, Samuel Peech, George Varnell, and William Stockley, who retired by rotation, and one in the place of the late Mr. Lacey. The ballot being declared, it was found to have resulted in the re-election of the above-named as councillors for the ensuing four years, and of Mr. Jno. Jones in the place of Mr. Lacey.

The subjoined report was then read; and after the usual vote of thanks to the President and other officers of the College, the meeting broke up, all lamenting the little interest which the profession apparently takes in the working of its charter.

In the evening of the same day, a dinner in honour of the retiring President, took place at the Freemasons' Tavern. Mr. W. Robinson, V.S., Tamworth, filled the Chair, and Mr. W. Burley, V.S., Leicester, the Vice-chair. The dinner was all that could be desired, everything passing off most pleasurably, except that again we had to regret the want of a greater number being present, to show our unity and our strength.

We are somewhat at a loss to devise what best to do to counteract this increasing declension, if we except the measures we have elsewhere alluded to; for even when royalty has mingled amongst us, there has not been that

gathering which was hoped for, while some have said, in the grumbling characteristic spirit of Englishmen, cannot we do without the countenance of the rich and noble of the land; of what use are they to us? We answer, much every way: *firstly*, we profess to be loyal and dutiful subjects of our gracious Queen—the patron of our own schools—*secondly*, it is to the patronage of the rich and noble we have to look for much of our support. Servility we despise; nor is it at all demanded of us in the pursuit of our calling; but presumption is equally and even more despicable. Respect is due to all; and honour, we are told, to give “to whom honour is due;” and we are sure that he who thus comports himself, will, in the end, reap his reward.

But take the converse of this, and let there be a purely veterinary dinner, and what is the result? From these our friends keep away altogether, and the numbers are still less than before: the present is the age of complaining, and such is the perverse and contradictory spirit of human nature, that it always runs from one extreme to the other. Again we ask, what is to be done so as to meet this growing evil? We pause for a reply.

Abstract of the Proceedings of the Council of the Royal College of Veterinary Surgeons, during the year 1855-6.

It is gratifying to be able to state that, during the past year, the events have been of an ordinary and tranquil nature; no incidents having occurred to cause either anxiety or trouble to the Council or the profession at large. Taking advantage of this state of affairs, your Council thought the time had arrived when some means should be adopted to overcome the differences which had so long existed between the body corporate and the Edinburgh School, and it was deemed desirable that some conciliatory measures should be adopted to secure so important an object.

A Special Meeting was therefore duly convened, the required notice having been suspended during the prescribed period, and a long and deliberate discussion which took place resulted in the following resolutions: *firstly*, that the Examination Fee should be reduced from ten guineas to seven; *secondly*, that the Board of Examiners for Edinburgh should be remodelled, Professor Dick being consulted as to the new appointments; and *thirdly*, that steps should be taken to admit into the body corporate those persons who had previously passed Professor Dick's Board, or as it was stated to

be, the Board appointed by the Highland and Agricultural Society, but who had not received the Diploma of the Royal College of Veterinary Surgeons. A copy of these resolutions was forwarded to Professor Dick, accompanied with a request to be informed if they were in accordance with the wishes of the Edinburgh School. The reply received from Professor Dick contained no direct answer to the request made, but stated that when a *distinct proposal* was made to him he would lay it before the directors of the Highland and Agricultural Society. The above resolutions not having been received in the spirit in which they were passed, the Council declined to confirm them, and appointed a Committee consisting of the President, Messrs. Robinson, Ernes, and the Secretary, to communicate with the Highland and Agricultural Society through Professor Dick. The following letter was forwarded in November last, to which, *up to the present period, no reply has been received* :

“ROYAL COLLEGE OF VETERINARY SURGEONS ;
October 31st, 1855.

“Dear Sir,—The Council having declined, at their meeting of the 24th, to confirm the minutes of the 24th of August last, it was moved and carried that a Committee be appointed consisting of the President, Messrs. Robinson, Ernes, and the Secretary, to communicate with the Highland and Agricultural Society through Professor Dick, relative to the Board appointed by the members of that Society some time back, to examine the pupils educated at the Edinburgh Veterinary College.

“The members of this Committee are willing to believe that the circumstances which gave rise to that Board no longer exist, and they further hope that the Highland and Agricultural Society will, after due consideration, and by the consent of Professor Dick, take such measures as may lead to its dissolution.

“The Committee further believe that the time has arrived when such an act would be attended with many advantages to the Veterinary Profession, inasmuch as the pupils educated at the London and Edinburgh Colleges, would appear before the Board appointed by the Council, in London and Edinburgh, under the proposed reduced fee of seven guineas, and upon passing the required Examination, become Members of the Body Corporate, and equally claim to be eligible to practise their art, and to fill, when called upon, all veterinary appointments in the public service.

“The Committee will be most happy to lay before the Council the reply, and any proposed arrangement of the Highland Society calculated to meet the existing differences, and the Committee feel assured the Council will be prepared to adopt any suggestion which may lead to a friendly and speedy settlement of them, not incompatible with the interests of the body which they represent.

“I remain, dear Sir,

“Very truly yours,

“E. N. GABRIEL.

“PROFESSOR DICK.”

Among the earliest events which occurred after the last Annual Meeting, was one honorable alike to both parties interested in it. This was the re-election to office of your President of the preceding year, W. Field, Esq.; honorable to the elected as being an unmistakeable proof of the zeal, ability, and suavity with which he had previously fulfilled the onerous duties of his office, and honorable to the electors as evincing a just discrimination of the value of the services that had been rendered them by their elected head; nor will the reminiscences of the past year in any degree lessen the favorable impression previously made. The same straightforward path has been trodden by him, and the like "*suaviter in modo*" with the "*fortiter in re*" has secured to every member of the Council the full and unbiassed expression of his opinions, without for a moment tolerating the attempt to pass the legitimate lines of free and liberal discussion.

But while due appreciation is thus shown to those who *are* working with us, let it not be thought that those who *have* worked for us and contributed very materially to obtain the position which we now occupy are either neglected or forgotten. Among the foremost of these was our first President, Thomas Turner, Esq.

In the July number of the *Veterinarian*, 1854, is the following announcement:

"At a meeting of Veterinary Surgeons held at the College, July, 1854, it was unanimously resolved,—

"That the first President of the Royal College of Veterinary Surgeons, Thomas Turner, Esq., nominated in the Charter and re-elected for several succeeding years, is well deserving, from the zeal and assiduity with which he performed the duties of his onerous position, of a demonstration of the esteem and value entertained for him by his professional brethren.

"That a memento thereof, in the form of a portrait or bust, to be placed in the College, be obtained by subscriptions of not more than one guinea each from the members of the profession.

"That for the purpose of carrying out this object a Committee be formed, consisting of the President and ex-Presidents of the Royal College of Veterinary Surgeons, Messrs. Field, Robinson, and Goodwin, with Professors Spooner, Simonds, and Morton, and Mr. Gabriel.

"That subscriptions be received by the Members of the Committee and at the College.

"The subscription list will be closed on the 31st of

October, and the Committee will be obliged by all subscriptions being forwarded to them before that time.

“E. N. GABRIEL,
Honorary Secretary.”

From the produce of this subscription a first-class portrait in oil, by H. W. Pickersgill, R.A., was obtained; and at the request of the Committee, Mr. Robinson, at the Quarterly Meeting in October last, undertook the gratifying task of presenting it to the profession, through the President and Council, to be placed in the Board-Room of the College. It was accepted, on behalf of the Council, by the President, in a manner that showed how fully he participated in the feelings which originated it.

From the reports of the Registrar, we find that twenty-seven deaths have occurred during the past year. Among them is Mr. William Lacey, of Adbolton, one of the oldest members of the profession, and who at the time of his death was a Member of the Council; another is Mr. Robert Thomson, of Beith, a Member of the portion of the Board of Examiners acting for Scotland; and the third, in official connection with the College, is Mr. R. Taylor, of Bury St. Edmunds, who was a Vice-President in 1851. The number of pupils who have received their Diplomas during the year is fifty, making 562 who have passed the Board of Examiners since the obtainment of the Charter. The changes in the Register published in 1854 are already very considerable, having been augmented to no small extent by the great demand for Veterinary Surgeons in the army occasioned by the war, which demand it will be found has been most satisfactorily met, most of the appointments made having given general satisfaction. The number at present on the Register is 1412.

The Board of Examiners has met with its share of vicissitudes, death has not been sparing of its Members, for Bransby Cooper, Liston, M'Gregor, and Mercer, among the Medical Members; Mayer, Sen., W. Percivall, Thomson, and Tindall, among the Veterinary, have been taken hence; and when to these we add the resignation of Stanley, Lizars, and Mayer, Jun., it will be apparent that no little care and selection were required to preserve that degree of efficiency and weight so essential to the continued advancement of veterinary science. The more recent elections have been those of Messrs. Field and Lepper to the English; and Professor Miller, Drs. Dunsmore and Mori, and Messrs.

Wishart and Cockburn, to the Scotch portion; and on these we may safely rely to support the influence and dignity of the Board.

The Finance department continues satisfactory. The balance in hand of the Treasurer being double that of last year. For the first time, too, interest is being received on the capital, the sum of £250 having been transferred to the deposit account at the Bank of London at the present rate of five per cent. The balance in hand, as will be found on reference to the Treasurer's report, is £303 10s. 10d.

The Library and Museum have not received that degree of augmentation which your Council had anticipated. Contributions to the latter, however, have been received from Messrs. J. Turner, J. R. Cox, T. C. Shorten, J. Brown, A. B. Henderson, W. Robinson, and J. Wattam.

Should the question be asked, what more is wanted to raise the position of the Veterinary Profession and Science and to secure its onward progress? the answer would be union and reunions. Union of the professors of the recognised schools, with the elected representatives of the profession, the Council—reunions of the Members of the body corporate with each other. The first once permanently established, and the second regularly and periodically carried out, would do all that is still unhappily left undone to ensure to us not only our own self-respect but also the respect of the public. If it be further asked, can the latter by any efforts be acquired? let the soirées of our President constitute the reply—at his invitation the Aristocracy, the Clergy, the Magistracy, with the representatives of Law, Physic, and Surgery, the Sciences and Fine Arts, rallied round the lowly pillar of Veterinary Medicine to do it honour, and to lend a friendly hand to complete the building thereof and to maintain its stability. With such proofs before us, only let us be true to ourselves, and then the professional title which has hitherto been the barrier to our entrance, shall freely open to us the portals of Learning, Science, and the Arts.

E. N. GABRIEL,

Secretary.

PROFESSOR MORTON, TREASURER, in Account of Cash with the Council of the Royal College of Veterinary Surgeons.

<i>Dr.</i>		<i>Cr.</i>	
1856	£ s. d.	1856	£ s. d.
April.		April.	
To balance from last year	. . . 150 7 5	By Fees for Board of Examiners . .	. 136 10 0
" Examination Fees . . .	. . . 572 5 0	" Allowance to Secretary . . .	. 80 0 0
" Copies of Register . . .	. . . 2 13 0	" Rent . . . . .	. 60 0 0
" Interest . . . . .	. . . 0 12 4	" Wages . . . . .	. 40 0 0
		" Rates and Taxes . . . . .	. 33 6 1
		" Insurance . . . . .	. 4 14 3
		" Printing . . . . .	. 10 19 0
		" Advertising . . . . .	. 11 4 2
		" Coals, Gas, and Wood . . . . .	. 10 11 6
		" Stationery and Postages . . . . .	. 9 4 0
		" House Repairs . . . . .	. 8 9 11
		" Reporter . . . . .	. 5 5 0
		" Petty House Expenses . . . . .	. 12 3 0
		Balance in hand . . . . .	. 303 10 10
			<u>£725 17 9</u>

We, the undersigned, have audited the above, and found it correct.

GEORGE JESSE AUSTIN,
EDMUND CHARLES.

April 9th, 1856.

EXAMINATIONS AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following are the names of the gentlemen who passed their examination in the science and practice of Veterinary Medicine, before the Board of the Royal College of Veterinary Surgeons, and received their Diplomas on April 30th, and May 1st:—

W. J. Bowman . . .	Howden.
J. W. Callow . . .	Lindfield.
H. C. Legge . . .	Mickleham.
Jno. Field . . .	London.
F. G. C. Shaw . . .	East India.
W. Shipley . . .	North Walsham.
C. Stevenson . . .	Newcastle-upon-Tyne.
T. Adamson . . .	Aycliffe.
J. B. White . . .	Swanton.
C. Harris . . .	London.
H. Howse . . .	Lincoln.
W. H. Crowhurst . . .	Warbleton.
G. Heyes . . .	Liverpool.
T. Hill . . .	Scole.
C. Cartwright . . .	Oxford.
R. H. Pritchard . . .	Wolverhampton.
J. B. Martin . . .	Rochester.
J. Barker . . .	Sheffield.
H. Burt . . .	Eastbourne.
R. Lambert . . .	London.

The following, also, passed their examination before the Board appointed for Scotland, and received their Diplomas on May 9th:—

William Taylor . . .	Manchester.
Walter Lewis . . .	Great Wadworth.
Andrew John Brown . . .	Hilltop, Pontefract.
William Mason Brooks . . .	Breeden.

MISCELLANEA.

INTRODUCTION OF A CHINESE PLANT INTO FRANCE.

THE scarcity of corn in France has drawn attention to a new plant recently introduced from China, which promises to supersede, to a certain extent, the use of beet-root in the manufacture of sugar and the distillation of alcohol. The Agricultural Committee of Toulon has recently addressed a report to the Minister of War, with respect to the uses of the plant in question. It is called the sorgho, or *Holcus saccharatus*, and was first introduced into France in 1851, by M. de Montigny, the French consul in China, who sent some grains of the seed to the government. Since then the culture of the plant has been commenced with success in Provence, and promises to be of great advantage to Algeria. The sorgho has been called the "sugar-cane of the north of China," and numerous experiments have recently been tried with a view to ascertain if it possesses the properties necessary for producing a crystallizable syrup, so as to become a rival to sugar-cane and beet-root. According to the Report of the Toulon Agricultural Association, it would appear to have those properties. The fact has been ascertained by a series of experiments made in the department of the Var. It also appears to be richer in the saccharine principle than any known plant excepting the vine. Beet-root contains from 8 to 10 per cent. of sugar; the sorgho produces from 16 to 20 per cent., from which 8 or 10 per cent. of pure alcohol, fit for all industrial and domestic purposes, can be produced. The refuse is excellent food for cattle, which are very fond of it. The plant grows with great rapidity, and does not require irrigation. The sorgho is not a new discovery, as it has been used from time immemorial by the inhabitants of the north of China, by whom large quantities of sugar are extracted from it. But this is the first time it has been introduced on anything like an extensive scale in Europe.

EXTRAORDINARY BREED OF SHEEP.

THE *Journal de Vervins* says: "In 1852, an American vessel brought from Shanghai to the United States some sheep of a very valuable breed, and remarkable for their fecundity. They lamb twice a-year, and, what is most extraordinary, produce, when they have attained full maturity, two, four, and even six lambs at a time. In February, 1853, one ewe, belonging to Dr. Emerson, of Philadelphia, gave birth to three lambs; in the month of August she had two others; and each of those born in February having had young, the old ewe in nine months was at the head of a family of eight lambs. The flesh of this breed is very delicate, and the wool, though not very fine, can be usefully employed for blankets and carpets. Viscount de Leempoel, who was the first to introduce the Durham bulls, cows, and pigs from Essex into our arrondissement, and who first made use of the machine for making draining pipes, has just written to a correspondent at New York to ascertain the truth of the above account, and, if correct, to have a thousand rams and ewes of the above breed sent for him to Havre."

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Communications and Cases.

ON THE RELATIVE WEIGHT OF THE BODY AND
OF THE VISCERA OF THE ELEPHANT.

By EDWARDS CRISP, M.D.

IN July, 1854, I made a communication to the Zoological Society on the weight and form of the viscera of the elephant, and I exhibited drawings of the thoracic and abdominal viscera of the size of life. I made some additional observations on the same subject at the Physiological Society of London, an abstract of which is published in the medical journals (the *Lancet* and *Medical Gazette*).

The animal I had then dissected was a male elephant, which died on Marsden Moor, in Yorkshire, in the menagerie of Mr. Wombwell. The recent death of the female elephant in the Society's collection enables me to extend my observations, and I purpose now only giving the comparative weight of the bodies and of the viscera of these animals, with a few additional remarks.

The age of the male was twenty-two years, and he measured ten feet from the highest part of his back. The animal, prepared by Mr. Bartlett, is now in the Crystal Palace. The cause of death, inflamed lungs. The weight stated at the Railway was three tons when the body was eviscerated, but, judging from the weight of the last specimen, it could not *altogether* have exceeded three tons, and assuming this to have been the weight, the relative proportion of the viscera is about as follows :

Brain, 12 lbs.	$\frac{1}{360}$.	
Lungs, 47 lbs. 8 oz.	$\frac{1}{110}$.	
Heart, 17 lbs. 9 oz.	$\frac{1}{382}$.	
Liver, 33 lbs. 12 oz.	$\frac{1}{199}$.	
Spleen, 6 lbs. 9 oz.	$\frac{1}{1024}$.	
Right kidney, 7 lbs. 2 oz.	$\frac{1}{913}$.	} Supra-renal capsules included.
Left kidney, 5 lbs. 10 oz.	$\frac{1}{1194}$.	
Alimentary canal, 106 feet.		

The next-mentioned animal, a female, about thirty years of age, had been eighteen years at the Society's Gardens, and was in good health and condition up to July the 14th, 1855, when, during the thunder-storm on that day (Saturday), she exhibited signs of fright, diarrhœa came on, she shook violently, and died at five o'clock on Monday morning. From the appearance of the blood, microscopical and otherwise, I have reason to believe that her death was occasioned by fright or by electrical influence.

Mr. Bartlett had the body weighed, and the subjoined is the result :

Skin	683 lbs.
Flesh and bones	3642 „
Supposed loss	200 „
	<hr/>
	4525 „

The viscera were weighed with steelyards, and adding the weight of the viscera to the above, the total amount is about 5225 lbs. The under mentioned are the proportions :

Heart, 25 lbs. $\frac{1}{227}$.	
Lungs, very much congested, 107 lbs. $\frac{1}{48}$.	
Liver, 50 lbs. $\frac{1}{104}$.	
Spleen, 9 lbs. $\frac{1}{550}$.	
Kidney, 8 lbs. $\frac{1}{653}$.	
Alimentary Canal—	
Esophagus about	6 feet.
Stomach	3 „
Small intestines	74 „
Cæcum	5 „
Other large intestines	35 „
	<hr/>
	123 „

The large intestines, from their great weight, were not extended like the small, and I measured them with a foot rule, so that the *exact* length could not be given, but I believe that the error (if any) is very slight. The large intestines were of great size, and would probably have held 150 gallons of water.

In estimating the comparative weight of the viscera of the above animals, it must be borne in mind that the male was very thin, and the female in excellent condition ; and this leads me to speak of a curious circumstance respecting the presence of fat in the body of the elephant. In the male not a particle of fat was present. Mr. Bartlett, who has assisted at the dissection of four elephants besides the last named, could find no fat in their bodies, and all writers that I know of have made the same statement. The body of this animal,

however, contained a large quantity (probably 40 or 50 lbs. in all) of fat. This was not deposited in solid hard masses, as in the *carnivora*, *ruminantia*, and other animals, but it was dispersed about the viscera, stomach, intestines, heart and mesentery, in thinnish layers, and a great deal of it, when the body was warm, was in a fluid state; but on cooling it assumed a tallowy condition, and evidently contained a large quantity of stearine.

Another circumstance I may allude to, respecting the assertion of many writers, that the body of the elephant decomposes very rapidly; but this, as I stated in my first paper, depends much upon the state of the atmosphere. The body of this animal was in a rapid state of decomposition; but the viscera of the male, which were buried on Marsden Moor, and which I had exhumed after the animal had been dead about a week, were scarcely in the first stage of decomposition, but the weather was excessively cold.

The kidneys of the female were lobulated, those of the male not lobed.

As stated in my first communication, I examined in the space of a fortnight the teeth of ten living elephants in this country, and this animal was among the number. I copy the description given in February, 1854:—"One molar on each side of the upper jaw, one on the left lower jaw, and two on the right side. The anterior one being narrow, of a dark colour, loose, and evidently on the point of being shed."

The keeper found this tooth some months after. At the time of death there were four molars; the upper two having eleven plates each, the lower, twelve. No rudimentary teeth were perceptible externally, but small apertures existed for their advent.

RUPTURE OF THE COLON OF A HORSE.

By T. JEX, M.R.C.V.S., V.S. 1st Life Guards.

March 26th, 1856.—A bay gelding, seven years old, was observed, at 6 a.m., to be very uneasy, showing symptoms of colic. An anti-spasmodic draught had been given before I saw him, which was about 10 o'clock. At that time he appeared easy, was lying down, and remained quiet for some time; but at 2 p.m., he again became restless. The pulse was regular, the respiration very little accelerated, and the

legs warm ; but the bowels not acting he had given to him the following draught :

℞ Ol. Lini, Oss ;
Sol. Aloës, fʒiij ;
Spt. Æther. Sulph., ʒj
Pulv. Opii, ʒss ;
Aquæ tepid., Oj. Misce.

Clysters were also directed to be frequently thrown up during the day.

10 p.m.—The animal is in much the same state as last reported, and, as yet, there is no action of the bowels. Repeat the draught, omitting the Ether, and continue the clysters. Bandage the legs, which have become cold.

27th.—The animal is very uneasy, nor have the bowels responded. The countenance indicates acute pain ; the pulse is a little quicker, but soft, and the extremities are warm. The animal manifests a desire to lie down, which he does for some length of time, without any visible pain. The draught was again repeated, and the clysters continued in use of. Stimulate the abdomen with the mustard liniment.

3 p.m.—The animal is more uneasy ; the torpitude of the bowels is still present ; the pulse more accelerated ; the legs rather cold ; the countenance haggard, and from time to time he looks back towards his flank.

℞ Hydr. Chlorid., et Pulvis Opii, āā ʒss, in bol.

to be given every four hours, and repeat the stimulant to the abdomen.

10 p.m. — The unfavorable symptoms are unmitigated, nor have the bowels acted. There is evidently some active disease going on, and the animal is constantly lying down. Repeat the draught and the balls, and the stimulant to the abdomen.

28th.—The patient shows more pain, and tenderness is expressed on pressure being applied to the abdomen. Foment the belly with large cloths dipped in hot water, and continue this for some hours ; afterwards, again stimulate with the mustard liniment.

The animal has remained in the same state during the day, the countenance indicating much suffering. The bowels have not responded since he was first taken ill, and he is now evidently sinking.

29th.—The horse continued in great pain throughout the night, and died at 8 a.m., this morning.

Post-mortem Examination.—On the abdomen being opened, there was found a great quantity of feculent matter floating amongst the intestines; the peritoneum was highly inflamed and the bowels very much distended, both with ingesta and gas. On the large intestines being drawn aside, a rupture of the colon was discovered, extending about eighteen inches, from which opening the fecal matter had escaped.

This animal had been used for drawing a heavy brougham, and whenever he started was in the habit of plunging forward. This, I think, must have been the cause of the rupture, the stomach and bowels being at the time full of food. But what appeared most strange, was the difference of the symptoms from ordinary inflammation of the bowels. From the first, I was led to believe that some lesion of them had taken place, in consequence of the disposition shown by the animal to lie down, which he would do for hours at a time without evincing any pain.

ON NEUROTOMY.

By W. T. STANLEY. M.R.C.V.S., Leamington.

THIS operation having been lately so much commented upon in a sporting paper, by a Mr. Powell, as being a most cruel and useless one; and which assertion, to my surprise, has been in a great degree confirmed by the statement made, that Professor Varnell informed Mr. Powell, that frequently basketsful of sloughed hoofs were sent to the College as the result of this operation; and further, that the nerve that was excised was intimately connected with the brain; the inference drawn by the public from the professor's remarks are, that not only is the operation of neurotomy useless, but that the brain, the *primum mobile* of all action in the animal economy, is impaired in consequence of the excision of a portion of the nerve.

Since the publication of the above, I have, when recommending this operation to my clients, been often met with the response, "Oh! the hoof will be sure to come off, and you will also injure the animal's brain." Having now performed the operation for many years, and upon hundreds of horses, I aver that I know of only two cases in which the hoofs have sloughed off, and those were from the feet having been pricked in shoeing, and the treatment thereof neglected. I am fully

aware that many sportsmen, and some of our eminent veterinary surgeons too, are opposed to this operation, from their having witnessed ill success attending it; still, with all deference due to Professor Varnell's statements, I cannot come to his conclusions. In fact, I have seldom had cause to repent of having operated, although, of course, all cases are not equally satisfactory. Indeed, what operation is there that will always terminate successfully? It is gratifying to me to know, that in by far the majority of cases which I have operated upon, I have given satisfaction to my employers; and, with me, the operation will be still advocated in all *proper* cases.

The cases referred to by the Professor, must have been improperly selected ones for the operation, or the patients were not properly treated both preparatory and subsequently to the operation. There is no better guidance for the operation, than that given by the late Professor Sewell—and it would be well if his advice and instructions were always carried out—which was, to select those cases that would redound to the credit of the operator, and not confound other diseases of the foot with navicular-joint lameness, such as pumiced feet, chronic disease of the laminae, &c., and, also, not to operate in very advanced stages of ulceration of the bone, or when there is disorganization of the capsular ligament, and the flexor tendon; the fibres being attenuated from long adhesion and attrition against an ulcerated bone. In such cases, of course, the operation might have the effect of causing the hoof to slough off. The operation, to be successful, should be performed when the first symptoms of organic disease of the joint commences, and the horse's action is light and free, and not of a jarring character. In cases of this kind, the operation is invariably successful. I have performed it on several hunters, who, in their prime of life, from six to eight years of age, were lame from navicular disease, and have never heard of one case of a hoof sloughing off. Some of these horses have carried the huntsmen of our crack packs with perfect safety. I therefore contend, that if proper cases are selected, and the animals are well prepared before and after the operation, and *properly shod*, which latter is frequently not done, the operation will prove as valuable a one as Professor Sewell asserted it to be.

In addition to the navicular-joint disease, I have, in several cases of ossification and ulceration of the sessamoid joints, after firing repeatedly and rest have failed to do any good, divided the metacarpal branch of the nerve, first above the

disease, whether on the outer or inner side of the joint, which has removed the lameness and pain; and, in some cases, where the joint was not ankylosed, the ossification has become greatly diminished. I have, also, as I believe, successfully resorted to a division of the nerve in cases of spavin, and occult ulcerative disease of the hock-joint; excising the popliteal nerve just above the hock, when all other remedies have proved valueless. I am indebted to Professor Spooner for first suggesting this operation to me. A few months ago I operated upon a horse with a capped hock, the joint being ulcerated and likewise ossified to some extent, and the patient excessively lame. It had been both fired and blistered, and the animal rested for two years. As a last resort, I tried neurotomy above the hock, and the horse is now perfectly free from lameness and at daily work. In another case of bone spavin, in which there was considerable exostosis, and which had been fired, and caustics applied without any relief being afforded, I unnerved above the hock, and the animal became free from lameness. But to ensure success, great care must be taken afterwards always to have the horse properly shod, the heels of his hind shoes being well thickened, and the toes kept short. The animal, also, should not be turned out to gallop, nor put to too quick work at first.

I have had two cases in which the hoofs sloughed off from this hock operation, but one was in consequence of the horse not being shod properly, and turned out without my knowledge. The other horse had been operated upon for six months, and ridden as a hunter; when, unfortunately, he cast the hind shoe, and having been ridden home without a shoe, the sole became so bruised, that inflammation and suppuration ensued.

So far as my experience goes, it is to this effect, that the hoofs will not slough off solely from the operation, but there must be other causes either existing at the time of the operation, or produced subsequently, in addition to the navicular disease.

I had nearly forgotten to state that I always operate *below* the fetlock for hunters, it being more safe as well as less liable to be hit by the opposite foot, which sometimes causes the horse to become suddenly lame. Some horses are very apt to hit their legs just above the fetlock, where the operation is usually performed. I have also observed, that in the high operation, the foot comes down with much more force, thereby causing greater concussion to a diseased joint. Likewise, that, in some cases, from the shoeing not being properly performed, this operation fails.

I recollect performing neurotomy twice on a carriage-horse of Lady Willoughby de Brookes. The horse went sound for two years afterwards, and it answered so far well, but at the expiration of that time the lameness returned, when her ladyship said she would have it again performed. I therefore excised the nerve a second time, taking away the portion that had healed, and the horse worked eighteen months after this.

EXPLANATORY REPLY TO THE ABOVE COMMUNICATION.

By G. VARNELL, Assistant-Professor, Royal Veterinary
College.

MY DEAR SIR,—Professor Morton has placed in my hands a paper from you on the subject of neurotomy. His doing so, doubtlessly, was in consequence of my name being mentioned in it by you, and for which kind act I am extremely obliged to him. Your taking the subject up the way you have, to my mind, is quite consistent, and I am not at all surprised at your differing from the assertions I am reported to have made, *all of which I deny*. Neither have I authorised any individual to make any statement whatever from me respecting neurotomy.

During the latter part of the past session, one of our pupils informed me that an article had appeared in *Bell's Life*, in which my name was mentioned; but I did not read it. Had I done so, I should have felt bound to have contradicted the statements therein contained. I was glad, however, to be relieved from the necessity; not wishing to argue the question with a person who evidently knows little or nothing of the subject, and could unwarrantably use the name of another, as he has mine, in the instance you allude to.

In conclusion, I may add, that in every point of view respecting neurotomy, I agree with the remarks you have made; especially your statement respecting the importance of selecting fit and proper cases to operate upon.

Cases injudiciously selected, either through ignorance or a desire to operate upon anything for the sake of gain, have, I believe, brought a brilliant operation into disrepute. And such was likely to be the case, if I am to believe what the late Professor Sewell told me, namely, that a short time after the operation had become established, so many horses were unnerved for foot lameness, without any regard whatever to

the nature of the disease, or the kind of foot operated upon ; nor was any advice given as to what course the owner should take with respect to them afterwards, that very many lost their hoofs consequent upon the operation.

Please accept my kind regards,

And believe me to remain, yours truly.

P.S. You are at liberty to make what use of this you think proper.

CASES OF MELÆNA IN COWS.

By "CAUSTIC."

ALLOW me to direct the attention of your readers to a disease affecting cattle, which, so far as I am aware of, has not even been alluded to in works on cattle pathology. Judging from my own experience, it is not one of an occurrence so rare, nor can it be so nearly allied to other diseases in its character, as to have escaped observation ; neither can it be considered so slight an affection as not to be worthy of a place in our nosology. I allude to that peculiar kind of abdominal hemorrhage termed by medical practitioners melæna or enterorrhœa. It will answer my present purpose if I describe melæna as an hemorrhagic disease of the true stomach and intestines, accompanied or not by the vomiting of a dark brown or black grumous fluid mixed with blood ; or a discharge of the same *per rectum*. This definition, coupled with the cases I intend hereafter to describe, will, I trust, be found sufficient to make myself understood, and to draw the attention of my brother practitioners to this important disease. And may I further express a hope, that through the *Veterinarian* the profession may receive much valuable information from those older, more experienced, and altogether better qualified to instruct than the humble individual who now has the honour to address you.

CASE 1.—I was requested to attend a cow that had calved about three weeks. She had lived upon grass previous to the time of calving, was in fair condition, and quite well the previous evening. The following morning she gave but little milk, and was purging. Upon my arrival, I found she had an exceedingly anxious countenance ; the ears and horns were cold ; the heart could be heard beating several yards off ; the pulse at the jaw was exceedingly weak, numbering in the

minute 74; the coat staring; the back roached; the skin tinged yellow; the rumen and omasum full. She voided frequently an immense quantity of liquid and coagulated blood, mixed with feculant matter of a dark brown colour; indications of vomiting showed themselves, and after several attempts, she succeeded in ejecting from the mouth matter similar to that passed *per anum*.

In such a case as this, it was but too evident that what was to be done was to be done quickly; and having marked out my course, I immediately proceeded to put it into effect, which was first to throw several bucketfuls of cold water over her, then to cover her up with horse-rugs, and give the following draught:

℞ Ol. Lini, Ojss;
 Pulv. Opii, ʒij;
 Hydrargyri Chlorid., ʒss;
 Pulv. Zingiberis, ʒij;
 Ol. Juniperii, ʒiij. Misce.

This was followed in an hour and a half after, by—

Lini Oleum, Ojss, cum Terebinthinæ Oleum, ʒiv;

and small quantities of the latter were ordered to be administered several times during the day.

At night I found her much better. A little dark, soft, offensive dung was being passed occasionally. After this, small doses of diffusible stimulants, combined with vegetable tonics, and a strict attention to diet, brought about a state of perfect convalescence in about nine days. This cow I had treated some months before for pleuro-pneumonia epizootica.

CASE 2.—During the time I was attending the foregoing case, another cow was attacked in a somewhat similar manner. She was near calving, rather poor, and had pleuro-pneumonia epizootica about the same time as the other. It may be as well to observe, that the last-named complaint had been prevalent on that farm for three years, and this cow, with the others, had been at grass about three weeks upon a peaty, and, in some parts, badly drained field, in a low situation, the weather not being over genial for the month of May.

The ears, horns, pulse, &c., were in the same condition as the first case. The action of the heart was so violent as to be heard at some distance, and at every beat it seemed to shake the whole frame. She purged an immense quantity of dark liquid, mixed with coagulated blood, &c., but she did not vomit.

I adopted a similar treatment to this animal as I had done to the one that was recovering, and in a few weeks she too appeared to be quite well, with the exception of much debility being present. I therefore ordered plenty of nourishing food, with tonics and diffusible stimulants. She subsequently parturied, but I had great difficulty in extracting the calf, it being dead, and falsely presented. After this, the cow did well for the next three or four days, when, unfortunately, she had an apoplectic attack, and although much relieved from this, yet she could not stand. She was therefore slung, and every means suggested taken to restore her to health, but she died in about a month, a most miserable object.

A post-mortem examination was made by myself, the recording of which would throw no light whatever upon our present subject.

CASE 3.—I was requested to see a cow belonging to my father; a remarkably large, good framed milking cow, five years old. She appeared well the previous evening; had been turned out to grass in the day time, and was tied up at night, being allowed good hay. I found her lying down, and I could scarcely get her to stand up for a moment. The ears and horns were cold; the pulse weak, 74 in number; the beat of the heart very loud; the first and third stomachs full and hard. She had not vomited, but had evacuated, with some difficulty, a little dark-coloured pitchy matter. I at once gave no hope of recovery, but being persuaded to try what I could do, I gave her a large dose of linseed oil with the oil of croton, combining a gentle stimulant, but she died five hours after I first saw her.

Unfortunately I dislocated my ankle the same day; they therefore sent to me the stomachs, the liver, and the intestines, which I examined the following day. The rumen and omasum I found filled to repletion with food. The true stomach, and the whole of the intestines, contained an immense quantity of matter similar to that I have before mentioned; and, strange and incredible as it may appear to those who have never witnessed it, I could pull from the intestines several feet of it without its breaking. The mucous membrane was much inflamed, and had many dark patches resembling ulcers upon it, varying from the size of a sixpence to a crown piece. The liver was pale and softened in texture.

These cases occurred now four years ago; since which time I have had several others, all resembling, more or less closely, those I have described.

I think you will agree with me, that this disease ought not

to be termed dysentery ; yet surely it must have been, or how comes it that we cannot find any cases like them recorded ? or is it what the old farmers call “the bloody flux ?”

LUXATION OF THE PATELLÆ OF A HORSE.

By R. H. HOLLOWAY, M.R.C.V.S., V.S. Hon. E.I.C.S.

A FEW months back, I was requested by a friend, to look at a horse, a five-year-old Arab, which he had a short time previously purchased as a hunter and “pig-sticker,” and which, he informed me, had been unable to move for two or three days, in consequence of an attack which he considered to be rheumatic.

The horse had been castrated three weeks before this ailment. My friend proceeded to relate, in detail, the symptoms present, such as protrusion of one of the hind limbs, tumefaction, and great tenderness of the stifle joint ; also the means that had been adopted to effect a cure, namely, friction, with a stimulating liniment, which appeared to have caused acute pain to the suffering animal. I listened patiently to the conclusion, being anxious to gain as much information as possible, when I did not hesitate to offer as my opinion, that the case had been mistaken, and, in fact, that it was in all probability one of dislocation of the patella.

We shortly afterwards reached the stable where the patient stood.

The stiffened traction of the whole near hind limb backwards, together with the outward luxation distinctly visible, and the completely flexed foot and fetlock, left no room for further speculation. When I attempted to move the horse, he hopped, as it were, upon the three remaining legs, the near hind foot being dragged loosely along the ground after him.

I directed an assistant to draw the affected limb well forwards and upwards, whilst I, with steady and persistent pressure, endeavoured to return the luxated bone. This being effected, the horse moved perfectly well, but scarcely had he turned, before the patella slipped out again. I then called for a driving whip, the smack of which induced a sudden and almost involuntary start on the part of the animal ; and thus, by the extensor muscles, was the limb set again and again, for every fresh movement caused another displace-

ment, and that not only with one, but both patellæ, although the off-limb had not been previously affected.

With the continual aid of the whip, the horse was removed to the cavalry sick-lines, a distance of about three quarters of a mile, not however, without much patience and perseverance, for either one or the other of the patellæ slipped out at every few steps.

The actual cautery was now applied over both stifle joints, the animal not being allowed to lie down for some time; the hind legs were fettered, and every precaution was taken to preserve perfect stillness. All went on satisfactorily, and at the expiration of five weeks the horse was returned to his owner. From that time to the present, he has been constantly ridden at all paces, also hunted frequently, and has not had one return of his old affection. The horse, when purchased, was a remarkably stout, strong, muscular animal, but became reduced after castration, which was most likely one cause at least, of the luxations taking place.

I cannot at present subscribe to the belief, that the manner in which horses are usually picketed in India, their hind legs being fastened with "heel ropes," superinduces this particular dislocation. I have seen some hundreds of horses thus tied up; but have never met with a single instance of luxation of the patella in consequence. I have likewise interrogated those who have been long in India, and with horses all their lives, and have not succeeded in tracing an isolated case even to such a practice. I do not assert that there have not been any; but I have never met with one. The subject of the foregoing detail was always in a loose box subsequent to purchase.

I remain, &c.

JAULNAH; *March* 30, 1856.

PURPURA HEMORRHAGICA IN THE OX.

By JOS. NORRIS, M.R.C.V.S., Crediton.

THE subject of this disease was of the Devon breed, and engaged in agricultural labour. He was bred by the owner, and enjoyed an uninterrupted state of good health prior to the 22d of March, in the present year, at which time my attention was first directed to him, in consequence of it having been stated that he had passed a fecal evacuation containing a sensible proportion of both pus and blood. On

watching my patient, I soon perceived that feculation was effected only with difficulty, and a sanious discharge was still escaping. The animal functions, however, were only slightly deranged, the pulse being normal, respiration quiet, coupled with a gay expression of countenance, clearly denoting that there was little fear of immediate danger.

On examining *per rectum*, the origin of the illness was palpable, there being considerable tumefaction superiorly, about six inches distant from the anus; the internal area of the intestine having thus become diminished, leaving but a contracted space for the passage of the fæces. In the centre of the swelling was a lesion sufficiently large to admit the finger, which I opined resulted from injury from without. I supposed his attendant had been misled respecting the voidance of pus, basing my opinion on the fact, that the animal indicated no symptom of disease till within a few hours before my examination. Thinking it impolitic to be over inquisitive, little was done to unravel either the depth or direction of the lesion. A mild laxative was administered, conjoined with which was ordered a succulent diet, such being all that was deemed by me requisite. His original health soon became re-established, so that he resumed his work in the beginning of the present month.

All went on well until the evening of the 18th inst., when slight dulness was observed to be present; yet there was nothing to call for any marked attention, but the subsequent morning brought fresh disclosures. The appearance of the animal was now desponding, with a staggering gait, which prevented his walking from without his pasture. On my seeing him at 3 p.m., he seemed to be in a most pitiable condition, he was lying by the fence, with the head turned to the side, occasionally moaning; pulse 105, and weak in tone; respiration normal; conjunctival membrane on the right side spotted with ecchymosis of a florid colour, a small number of spots were also present on the opposite side, which were mostly discernible in its superior palpebral reflection, thus forming a singular contrast with the bloodless appearance of the contiguous parts; the oral mucous membrane was unusually pallid; and muscular tremors affected the trunk. On waiting awhile he arose, and shifted his feet, but soon returned to his former posture, seeming to suffer from general discomfiture. On walking over the field there were found several lumps of dark coloured grumous blood, about six or eight ounces in each lump. At other places, there was an admixture of fecal matter with the same fluid, giving a brown tint to the whole as if they were quite incorporated.

Having so recently attended the animal for the intestinal lesion, I suspected the hemorrhage arose from the walls of a secondary abscess; and entertaining but little hope of his recovery, he was immediately destroyed, by making a deep incision near the side of the sternum, in a direction towards the anterior aorta, when the vital fluid gushed out presenting an unnatural serous aspect, as if its qualities were considerably vitiated. Soon finding its way in the descent, it showed a very faint disposition to coagulate, staining the hands with only a weak trace of redness.

The common integument was next removed, the inner surface of which was thickly speckled with florid extravasations, corresponding with similar ones in the subcutaneous areolar tissue, these varying from the size of a split pea to half the diameter thereof. The hind quarters had more of these spots than the fore ones, some of which were arranged in clusters, whilst others were systematically placed at about an inch apart. On the parietes of the abdomen being divided the digestive viscera became visible. Their somewhat pellucid envelopes beautifully pointed out the nature of the malady. Small sanious deposits, or petechiæ, were everywhere dispersed over the glib surface, these being particularly thick and having a linear arrangement on the great curvature of the rumen; the maniplus was less affected. On arriving at the abomasum, its external coat was seen to put on the same aspect as the neighbouring organs, and on making a longitudinal incision through its coats their thickened condition became apparent, arising from the copious effusion of a fibro-serous material into the submucous membrane. Its mucous coat was densely studded with petechiæ of a bright red colour, about half an inch distant from each other, and of a smaller size than those on the exterior part of the organ. At this point, the ingesta first became tintured with blood, giving to it a dirt-coloured look when contrasted with the green shade of the contents of the maniplus. The small intestines were beset with marks on their external coat, which were less observable in the colon and rectum. The loose areolar tissue at some short distance from the anus was thickened, and on making an incision into the part, exit was given to about an ounce of healthy looking pus, which was bounded by a well-defined limiting membrane, connected with which was a fibrous cord leading to a small concavity situated on the superior part of the rectum, evidently the cicatrix of a repaired injury.

The peritoneum also bore marks of the disease; the extravasation becoming exceedingly vivid on the adipose deposit

under the psoas muscles, giving to it a complete flea-bitten appearance. A few ecchymose spots were dispersed over the cordiform portion of the diaphragm, as well as on the pleuræ costales. The lungs were quite free from congestion, having few petechiæ only over their surface, these being thickest on the edges of the posterior lobes. The large vessels were almost bloodless. The left lobe of the brain had three or four extravasated spots on its surface, but otherwise this organ was normal. On opening the pericardium, the heart presented the worst specimen of the disease; its surface having a deep purple colour; I have therefore forwarded it for your inspection, although it has already become lighter somewhat in colour in consequence of atmospheric exposure.

[The heart kindly sent to us by Mr. Norris, had all the appearances usually met with in animals dying of purpura. Petechial spots existed both on its external and internal surfaces. Blood had also escaped from the capillary vessels into the substance of the organ.]

STRAY LEAVES FROM MY CASE-BOOK.

By M.R.C.V.S.

PROBABLY my contributions, which have been now for some little time interrupted, will manifest more variety than novelty, for I have no favorite views or doctrines to promulgate, nor any fancied theory to uphold. A simple detail of facts, as they have occurred under my immediate notice, is all I aim at in these scattered leaves.

5. *Contused foot-wound—inflammation of the bowels—laminitis—death.* On the coronet of the off hind foot exists a solution of continuity, probably caused by the calking of the shoe of the opposite foot. The wound has an unhealthy appearance, and its edges are ragged. Remove with a knife the partially detached parts, and apply over the whole a poultice of bran.

On the following day ordinary stimulants were employed, and the poultice repeated at night.

On the third day the wound presented a more healthy aspect, and the same treatment was directed to be persevered in.

On the sixth day after admission, an attack of inflammation was experienced by the animal; the bowels appeared to

be principally involved, and with which the liver sympathised. The pulse became much accelerated; pain was evinced, the breathing quickened, the extremities cold, the bowels torpid. Blood was withdrawn, a dose of laxative medicine administered, the diet restricted to mash, and the legs hand-rubbed and bandaged.

7th day. The pulse is lowered by the bloodletting to fifty beats in the minute, but much languor and debility are yet present, nor have the bowels responded to the medicine. Throw up enemata of warm water, and continue the use of the bandages.

8th day. The pulse has risen to sixty; the respiration is still hurried, the bowels continue torpid, and the small quantity of fecal matter brought away by the clysters is encoated with mucus; the visible mucous membranes are tinged yellow, and the legs and ears continue cold. Repeat the bleeding to the amount of 4 lbs. only; give aloes, ʒij, in ball, and occasionally throw up a clyster. Stimulate the legs, and continue in the use of the bandages.

9th day. The general symptoms remain as reported yesterday, except that the pulse has been again lowered in its number of beats. Repeat the aloetic ball and the clysters, and still employ the bandages. The bowels have not yet acted.

10th day. Inflammation of the laminae of both fore feet has shown itself. The walls are hot, and the animal is constantly shifting his position; the bowels are still torpid, and the urine is voided in very small quantities, which is high coloured, and the act is accompanied with pain and general excitement of the whole system. Withdraw blood from each arm, and apply poultices to the feet. Give aloes, ʒiij, in solution, and occasionally throw up an enema of warm water.

11th day. No amendment can be reported as having taken place. With the return of the clysters some fecal matter is occasionally voided, which is encoated with mucus as before. Much pain is evinced; all food is refused; the conjunctival and nasal membranes are injected, and of a yellow colour; the fore feet continue hot, and the pulse accelerated, but more feeble in tone. Poultices and enemata to be continued as before ordered.

12th day. The symptoms are more unfavorable, and the pulse has risen to eighty beats in the minute. Considerable general excitement is present, and apprehensions are entertained as to the result. About 11 o'clock the animal suddenly fell, when a copious alvine evacuation took place, and the urine also was voided freely; but he never rose again. He lay in great pain; the pulse increased in frequency until

it numbered 120 beats in the minute, the respiration became much laboured, and in the evening he died.

A *post-mortem examination* showed the mucous membrane of the intestines to be inflamed throughout, particularly that of the cœcum, which intestine presented almost a gangrenous aspect. The texture of the liver was easily broken down; the bladder inflamed, and likewise the lining membrane of the urethra throughout its whole course.

6. *Hepatitis—rupture of the liver—death.* The animal is aged, and has been subject to several acute attacks of inflammation of the liver. The pulse is 90, and weak, the breathing laboured, the conjunctival and buccal membranes tinged yellow, the ears and the muzzle cold.

Place him in a loose box, and let his general comforts be well attended to; administer a mild laxative, and let the diet consist of soft mashies, with gruel.

2d day. The pulse has risen to 100 in the minute, but it is still feeble in tone; the breathing, however, is less hurried, and the animal has stood in comparative ease during the night; but he now manifests much restlessness by pawing the litter and looking anxiously towards his flanks. The extremities are cold, and the bowels have not yet acted. Stimulate the legs with a mixture of turpentine and oil, and afterwards apply bandages of flannel, also blister over the region of the liver; throw up enemas, and give

Potassæ Nit., ʒss, in haustus.

4 p.m. There is no mitigation whatever of the unfavorable symptoms, rather, indeed, they have somewhat increased in urgency. Much excitement is present; the urine is frequently voided, small in quantity, and high coloured; the pulse is very quick, but extremely feeble; the breath is offensive; the visible mucous membranes are still yellow; suddenly the animal breaks out in a profuse perspiration, and then becomes covered with a cold clammy sweat. The state of the bladder being examined, it was found undistended, but the surrounding viscera felt as if much increased in heat. The bowels not having yet responded, enemata were ordered to be frequently thrown up, and the animal's general comforts studied, as hope of cure there is none.

3d day. During the night no change had been observed; early in the morning, however, the animal fell, and after violently struggling for some time, and being apparently in great pain, he died.

Inspection after death showed the liver to be in a highly dis-

eased state; its parenchyma was easily broken down with the finger, the whole organ presenting a mere pulpy mass. An extensive rupture of its own and the peritoneal tunic had taken place, and much blood had become extravasated into the abdomen. The intestines were slightly inflamed, and the right kidney enlarged.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Late Lecturer on Veterinary Medicine and Surgery, London;
Professor of Anatomy and Physiology in the Edinburgh
Veterinary College.

(Continued from p. 341.)

TREATMENT OF PLEURO-PNEUMONIA (continued).

THE observations that I last month committed to the pages of this Journal, intended as they were, in a measure, to supplant false theory by the unalloyed exposition of fact, and to show the futility of explanations of morbid phenomena based on the doubtful effects of the causes of disease, or of methods of cure in its treatment, led to some practical conclusions that merit still further attention.

I must here allude to what I have often spoken of in lecturing; that is to say, the use of stimulants in disease. Admitting them of worth when wisely employed, I can, on the other hand, safely say, that they are had recourse to, mostly, when it is not known what else to do, and it is, undoubtedly, the impression of some, that stimulants can never be productive of ill results. Such has been the idea with reference to the treatment of pleuro-pneumonia.

In saying that blisters "irritate and do not lead to absorption of the material thrown out into the lung-tissue," it is to be understood I was referring to what we daily witness in pleuro-pneumonia. In simple pneumonia of the horse, and other animals, I am in the habit of relying on mustard poultices* and blisters even more than is generally done, and thus I do

* By mustard poultices, it must not be understood the rubbing of mustard and ammonia on the sides of the chest, but the absolute application of large poultices without ammonia. This leads to extensive sub-

away with many draughts and other forms of medicine given internally.

It is very certain that support and tonics constitute important elements in the treatment of pleuro-pneumonia. The sulphate of iron has even been thought a specific. Lepona of Turin published some interesting cases, in the *Turin Veterinary Journal* for 1854, in which he used cinchona and sulphate of quinine. The usual outcry, when drugs of this kind are spoken of, is, that they are too expensive; but when, in each case that Lepona treated, the expense amounted on an average to between £1 and £1 10s., considering the value of the animals, the sum could only be looked on as very moderate; and if the medicine should really surpass all others in efficacy, this is no weighty objection to its employment. Lepona prescribes a drachm of sulphate of quinine in a quart of decoction of cinchona. The decoction is made with three ounces of the bark to a quart of water. This dose is given daily; and when the respiration is very laboured, with, apparently, the uniform result of giving relief. Three or four doses suffice to bring the animals into a convalescent state. In incipient cases, Lepona bleeds, blisters, gives tartar emetic, and attends to the comfort of the animals. It has been observed, that the blisters and setons have given rise to tumefaction and suppuration after the second or third day. Such manifestations have been looked on as critical and favorable.

LARYNGITIS IN THE OX.—Rinquet, veterinary surgeon in the Canton of Dordogne in France, relates the history of this disease, which was enzootic in his district during the autumn of 1854. Frequent as it is in the horse, it has been rarely witnessed in the ox. It was seldom fatal, but inspired fear from the loud roaring noise, which was its prominent and sometimes only symptom. The head was generally protruded, but often there was no impediment to deglutition, and not even cough or pain on pressure to the larynx. It was seen in working oxen, and these sometimes roared only when at the plough. It would sometimes pass off in two or three days, or else become chronic. In one case Rinquet observed suppuration to supervene. It had been mistaken for pneumonia. The animal looked anxious, the head was protruded; the submaxillary lymphatic glands were swollen and tender; there was a painful cough, and purulent matter

cutaneous effusion, and very rapid relief of the lungs. The skin is never denuded of hair, as might be supposed, if due care be taken, although the poultices remain on three and four hours.

flowed from the nostrils. The animal died on the 25th day of his illness, after having passed an immense quantity of pus through the nose. After death, the mucous membrane of the larynx was found much thickened, the sinuses of the glottis filled with pus, and abscesses of various dimensions surrounded the larynx.

It appears that in these chronic cases of laryngitis the mucous membrane was always thickened. In one case Rinquet observed three greyish ulcers, with jagged edges, and, here and there, deposits of tuberculous matter. Rinquet says, these lesions constituted what might be designated "Laryngeal phthisis."

The causes of this disease have not been studied. The roaring occurred so suddenly that it was often thought to be due to impaction of foreign substances in the œsophagus.

The treatment adopted consisted in fumigating the nostrils, bleeding and blisters. Indeed, much the same as in the horse.—*Journ. des Vét. du Midi*, June, 1855.

Youatt, in his work on cattle, says a very few words on laryngitis, at page 395. He says it is attended with loud and laborious breathing. Rychner, in his *Beyatrik*, gives a long history of the affection.

REFLECTIONS ON A TOOTH EXTRACTED FROM THE VICINITY OF THE EAR.—M. Lafosse,* professor of clinical medicine in the veterinary school of Toulouse, had under his treatment a four-year-old mare, that, two months before admission into the infirmary, was affected with a phlegmonous tumour in the vicinity of the left ear. This was opened; the wound that resulted rapidly contracted, but a fistula remained. On the 8th of February, 1855, when Lafosse first saw the case, he found a painful tumour, with a granulating wound just behind the scutiform cartilage, and near the upper part of the parotid gland. The mare was restless, and the parts could only be examined in a complete manner the day after, when she was cast. By probing, he ascertained that at the bottom of the fistulous tract was some hard substance, which he supposed to be the scutiform cartilage in an ossified state, or a portion of the temporal bone exfoliating. A severe operation was performed, and the solid object, with some difficulty, extracted. It was double, deeply seated, and firmly adherent to surrounding textures. Slight hemorrhage occurred, from division of the anterior auricular, which was easily stopped; the wound was dressed, and the animal soon recovered, having shown only a few symptoms of sore throat after the operation.

* 'Journ. des Vét. du Midi,' June, 1855.

I shall not translate M. Lafosse's description of the products he extracted. They were composed of tooth-substance; and although it has been questioned whether it is real tooth that is developed in the shape of accidental growths in the vicinity of the ear, still it is now a well-established fact, however puzzling to the minds of some it may be to comprehend the origin of their existence.

Lafosse attempts a teratological explanation, but first asks, "If teeth are looked on as arising from the tegumentary system, considering them in most animals as emanating from papillæ and mucous membrane, where was the dermoid papilla that constituted the basis of development of this tooth, deeply seated and close to the ear, especially as what might be taken as the crown looked towards the inner surface of the skin?"

Further on, Lafosse shows that in certain animals teeth absolutely emanate from the osseous system, such as in the *coluber scaber*, and other serpents, in which true osseous eminences, coated by enamel, pierce the œsophagean tunics, and project into the tube, whereas they are attached to about thirty vertebræ, of which they form the inferior spinous process. These are intended to crush the eggs that the serpents feed upon.

Having established that as well as developing from mucous membrane, teeth may spring from bone, Lafosse leads us, ~~where we never suspected~~, to consider the dental tumours, above spoken of, as congenital, and he looks on them as having sprung from some rudiment of a maxillary bone. In a word, he looks on it, ~~without offering any plausible explanation~~, as a fœtal inclusion. "It cannot," says Lafosse, "be looked on as an osseous transformation of certain tissues."

I have spoken of the case at length, as, surgically, it is of the very greatest interest. As pathological anatomists, it is most laudable to study the laws that govern disease as well as health, and hence most praiseworthy to dive into the mysteries of the origin of monsters, so it is even essential to adhere to facts, and not sacrifice them to theoretical explanations. In common with others, I have studied several of these dental tumours; they may spring from several of the bones of the head, but especially from the vicinity of the petrous temporal bone. They may project towards the interior of the cranium, more frequently do they extend outwardly. They may be strongly implanted in the bone, or get separated, and then they are maintained in their situation by the soft textures around. Their development is not more extraordinary than that of other osseous growths that spring

from the cranial or maxillary bones, and their structure is not more wonderful, being tooth-formed in the vicinity of tooth, than bony tumours formed in other parts of the system, whether connected or not with the skeleton.

(*To be continued.*)

Facts and Observations.

ON POISONING BY STRYCHNINE, AND ITS TESTS.

ALTHOUGH it is a well-ascertained fact that the purely herbivorous animals are less influenced by many of the vegetable poisons than the carnivora; yet it is equally as certain, that there are some of those agents which they are extremely susceptible of the influence of.

Among these we may place Strychnine, or Strychnia, the active principle of *Nux Vomica*. Instances of poisoning with this alkaloid are by no means uncommon, and its effects are so characteristic and decided that scarcely any doubt can be left on the mind of a person who has once witnessed its action on animals, as to the agent that has been the cause of death, even although chemical reagents may fail to demonstrate its existence in the body after death. This in a great degree is dependent on the fact, that small quantities suffice to destroy life even in the larger animals; of which abundant proofs may be found scattered throughout the pages of this Journal.

So unsatisfactory at times, has been the result of these *post-mortem* investigations, that some analytical chemists have refused to express their opinion respecting the presence of this agent unless it is separated and shown to them in its crystalline form. It has been, therefore, proposed to demonstrate the existence of the alkaloids as a class, by adopting precisely the same methods for obtaining them from the contents of the stomach, alimentary canal, &c., as are resorted to for their procurement from the vegetable containing them; since they are well known to combine with the acids in the system, and to form definite salts there. This certainly is not a more difficult process, and it must prove much more satisfactory, as it dissipates all doubt on the subject.

As general tests for these substances, MM. Larocque and

Thibierge find that perchloride of gold is a more decisive test of certain vegetable alkalies than the double chloride of sodium and gold already employed for this purpose. The following are the colours of the precipitates which it produces with the salts of the annexed alkalies dissolved in water: quinine, buff-coloured; cinchonine, sulphur-yellow; morphine, yellow, then bluish, and lastly violet; in this last state the gold is reduced, and the precipitate is insoluble in water, alcohol, the caustic alkalies, and sulphuric, nitric or hydrochloric acids; it forms with aqua regia a solution which is precipitated by protosulphate of iron: brucine, coffee, and then chocolate-brown; strychnine, canary-yellow; veratrine, slightly greenish-yellow.

All these precipitates, with the exception mentioned, are very soluble in alcohol, insoluble in æther, and slightly soluble in water. They appear to be combinations of gold, chlorine, and the vegetable alkali, for their alcoholic solutions treated with tannin give a greenish-blue precipitate of reduced gold; if the solution be filtered, and the alcohol evaporated by heat, a precipitate of tannate of the alkali employed is formed. The liquor again filtered, gives with nitrate of silver, a white precipitate insoluble in nitric acid, but soluble in ammonia.

Among the reactions of chloride of gold, there are two which to the authors appear to be especially important; they are those which occur with morphine and brucine; these are sufficiently marked to prevent these alkalies from being mistaken for each other, and also yield pretty good characteristics for distinguishing brucine from strychnine.

MM. Larocque and Thibierge detail also various experiments on the modes of detecting opium proposed by Dr. Christison, and they mention that their results differ much from his. They state that these differences may arise from three causes,—1st, the inequality of the composition of the opium of commerce; 2dly, the analytical process employed by Dr. Christison, which consisted in decomposing the meconate of lead by sulphuretted hydrogen—this the authors show frequently masks the meconic acid, and that it can only be detected by decomposing the meconate of lead with dilute sulphuric acid; 3dly, the variable nature of the liquids with which opium is mixed.

The authors have also, as the results of their experiments, arrived at the following conclusions:

1st. By the aid of reagents it is possible to determine the presence of morphine, strychnine, and brucine in substances, which, after being mixed with the salts of these alkalies,

have undergone the vinous, acetic, or putrefactive fermentation. M. Orfila has already shown that the putrefactive fermentation does not alter morphine.

2dly. Crystallized iodic acid, or a concentrated solution of this acid, is susceptible of being decomposed by neutral azotized bodies; but a dilute solution of this acid cannot be decomposed by them unless there be added concentrated sulphuric acid, crystallizable acetic acid, oxalic, citric, or tartaric acid.

3dly. Iodic acid should not be employed as a test of morphine without the greatest caution.

4thly. Perchloride of gold produces such effects with the vegetable alkalies, as serve to distinguish morphine, brucine, and strychnine from each other.

Before advertng to the particular tests for strychnine, the more especial object of this paper, we may be permitted to notice its toxicological action on animals generally, with the source whence it is derived. For this purpose we avail ourselves of the pages of a contemporary journal, from which we make the following extract :

“In Ceylon and several districts of India grows a moderate-sized tree, with thick shining leaves, and a short crooked stem. In the fruit season it is readily recognised by its rich orange-coloured berries, about as large as golden pippins; the rind is hard and smooth, and covers a white soft pulp, the favorite food of many kinds of birds, within which are flat round seeds, not an inch in diameter, ash-gray in colour, and covered with very minute silky hairs. The Germans fancy they can discover a resemblance in them to gray eyes, and call them crows'-eyes, but the likeness is purely imaginary. The tree is the *Strychnos nux vomica*, and the seed is the deadly poison nut. The latter was early used as a medicine by the Hindoos, and its nature and properties understood by Oriental doctors, long before it was known to foreign nations. Dog-killer and Fish-scale are two of its Arabic names. It is stated that at present the natives of Hindostan often take it for many months continuously, in much the same way as an opium-eater eats opium. They commence with taking the eighth of a nut a day and gradually increase their allowance to an entire nut, which would be about twenty grains. If they eat it directly before or after food, no unpleasant effects are produced; but if they neglect this precaution, spasms result.

“Powdered *nux vomica*, which is one of the forms in which the drug is preserved, has an extremely bitter taste, and smells like liquorice. As a medicine it acts, in very small

doses, as a tonic, and in rather larger quantities it is given as a stimulant to the nervous system.

“Its very peculiar and extraordinarily energetic effects, when taken in a poisonous quantity, have excited the interest of physiologists, and hecatombs of cats, and dogs, and mice, and guinea-pigs have been sacrificed in their researches. In 1809, Majendie and Delille read a paper before the French Institution on the result of their experiments on animals. Ten grains taken internally killed a dog in forty-five minutes, and a grain and a half thrust into a wound killed another in seven minutes. The symptoms were, in every case, of the usual character. The animal, a few minutes after the introduction of the poison, becomes agitated, and tumbles; in a short time it is seized with stiffness and starting of the limbs, which increase until a violent general spasm ensues, in which the head is bent back, the limbs are extended and rigid, the spine stiffened, and respiration checked by the fixing of the chest. An interval of ease follows, and then another paroxysm comes on, and another and another, till the animal perishes, suffocated or exhausted. Tetanus or locked jaw is the only disease that produces similar effects, but never proves so rapidly fatal.

“The action of the poison appears to be almost entirely confined to the spinal cord and the nerves of which it is the centre. Stannius found that the removal of the brain in frogs, did not interfere with the effects of the poison; and Eumert’s experiments lead to the same conclusion; he found that if the spinal cord be destroyed after the symptoms have come on, the convulsions cease instantaneously, although the circulation continues for some minutes. In man, however, there is occasionally stupor, while in other instances the sensibility is heightened, and the faculties are unnaturally acute.

“Plants, as well as animals, are affected by this poison. Professor Marut states, that a quarter of an hour after immersing the root of a French bean in a solution of five grains of the extract of *nux vomica* in an ounce of water, the petals became curved downwards, and in twelve hours the plant died. Fifteen grains of the same extract were inserted in the stem of a lilac-tree, and the wound closed; in thirteen days the neighbouring leaves began to wither.

“After all the attention that has been bestowed upon *nux vomica*, the skill of man has been unable to detect any certain antidote. Its effects during life are too characteristic ever to be mistaken: and, after death, unlike most vegetable poisons, it is almost invariably to be found in the stomach of

those poisoned with it. But to the wretched sufferer science brings no relief. The medical man has little else to trust to than emetics and the stomach-pump; artificial respiration ought also to be resorted to; and infusion of galls and green tea, on account of the tannin they contain, are mentioned as worthy of trial.

"In 1818, Pelletier and Caventou extracted from *nux vomica* the peculiar ingredient strychnine; it is to this that the seed owes its poisonous properties; it belongs to a class of substances which, owing to their action on vegetable colours, and their forming salts with acids, have been named vegetable alkalies or alkaloids, and of which the most familiar are morphia, obtained from opium, and quinine from *Cinchona* bark.

"Strychnine, which in our own country is exclusively prepared from *nux vomica*, is a white crystalline substance, but in the chemists' shops it is usually to be seen in the form of powder. It is odourless, but its taste is so intensely bitter, as to be perceptible when one part is diluted in a million parts of water. Its bitterness led to the unfounded and mischievous rumour that it was used in the manufacture of bitter beer.

"The action of strychnine is about six times as violent as the extract of *nux vomica*. Dr. Christian says—'I have killed a dog in two minutes with the sixth part of a grain injected in the form of an alkaline solution into the chest. I have seen a wild boar killed in the same manner with the third of a grain in ten minutes.' Pelletier says—'Half a grain blown into the mouth of a dog produced death in five minutes.'"

The tests for strychnine and its salts are many. Among the most recent is that of adding to the suspected powder a drop of undiluted *sulphuric acid*, so as to moisten it, then a little of *red prussiate of potash*, or ferro-cyanide of potassium; when, if strychnia be present, a fine deep violet colour will be immediately produced.

The bichromate of potash used instead of the prussiate will produce the like colour, but it is less abiding, and changes to a brown or olive shade, while the first-named passes more slowly into a light brick-red colour.

M. Marchaud has proposed as a test for this alkaloid the addition of a little peroxide of lead, which on being treated with sulphuric acid to which $\frac{1}{100}$ th part of nitric acid has been added, a magnificent blue colour is produced, which rapidly passes to a violet, then gradually to a red, and lastly it terminates in a few hours in a canary yellow. One thousandth part of a grain of strychnia may be thus detected, and no

other agent, it is said, has been found to conduct itself in a similar way.

It must be acknowledged that, in the application of these tests, with others that might be adduced, slight causes will often operate so as to alter the colours produced, whilst the shades of difference between some of them often deceive the inexperienced eye. On this account it is that the "physiological test" has been preferred by some persons; among whom we may mention Dr. Marshall Hall, who proposes employing frogs for this purpose. We have already transferred to our pages his experiments with these animals. But as frogs are not at all times to be got, other of the lower and smaller animals might be used. And since, in all toxicological investigations, inquiries should be instituted as to the symptoms presented before death took place, and as the alkaloids produce characteristic action on the organism, so unquestionably this becomes a very valuable adjuvant, as tending to confirm or otherwise the question of their existence. Moreover, it may be accepted as a general fact, that those poisons which are most difficult of detection by chemical means are most readily recognised by the effects produced by them on the living body.

Since our last, the following has appeared in the *Lancet* :

"*The Physiological Test for Strychnia.* By Marshall Hall, M.D., F.R.S., &c.—Some years ago several cases of poisoning by arsenic occurred in rapid succession. The career of crime was stayed by its being made publicly known that no poison was so readily or certainly detectible as arsenic.

"Arsenic is scarcely more detectible by chemical reagents than strychnia has proved to be by the physiological test which I recently published in the pages of the *Lancet*.

"Recently the 5000th part of a grain has been made manifest to a multitude of beholders at once, and so manifest that no visual object can be more conspicuous—an event very different from the fact of a mere change of colour.

"The effect is produced, too, by the simplest means, such as our medical brethren in the country always have at hand.

"The common *frog*, properly prepared, is not less susceptible of the convulsive effects of galvanism than it is of the peculiar effects of strychnia. Of frogs the smaller ones are more susceptible than the larger, and these should be used recently taken from the pond—from the *mud* if possible.

"The skin should be well dried by means of blotting-paper. The strychnia to be tested should be dissolved in as small a quantity of water as possible, and dropped on the back of the frog, so that it may become absorbed.

“Probably a still less quantity of this extraordinary agent may be made manifest if inserted under the skin, or injected into the stomach.

“In a short time the frog becomes affected with tetanoid or epileptoid spasm or convulsion on the application of the slightest cause of excitation. It is *strychnoscopic*.

“This susceptible creature may, I am persuaded, be made available for the detection of several other poisons, with each of which the kind and form of the phenomena vary.

“Strychnia in the vegetable kingdom answers to the *diastaltic spinal system* in the animal kingdom, on the *centre* of which its energies are impressed—a system, the extent of which in the animal economy—next to that of the *blood* itself—is not even now, after the lapse of nearly a quarter of a century, by any means known or appreciated by the profession!

“In this system there is a kind of ‘*solidarité*,’ by which every part is affectible by the excitation of every other:—in reality, *the spinal centre is what the great sympathetic was formerly supposed to be!*—but there is a *speciality* too, by means of which one organ may be affected more or less than the rest, thus leading to the difference of form of the phenomena produced, to which I have adverted. The motor branch of the fifth pair is most affected in traumatic tetanus, the laryngeals in strychnism.

“I am preparing an essay on the important subject of strychnia as a remedy, a poison, and as a physiological agent.”

We have been much impressed with the importance of this mode of testing strychnine, from perceiving in the public prints the following reports, made by Messrs. Morley and Nunneley, at the coroner’s inquest held in a recent case of suspected poisoning with this agent at Leeds. The course of procedure adopted by them may serve as a guide for others:

“Each of the three portions into which the stomach and its contents were divided was subjected to the following process of analysis:

“1. It was mixed with a sufficient portion of distilled water, acidulated with a sufficient portion of sulphuric acid, heated in a porcelain dish, and then the liquid portion was separated by filtration. The liquid portion thus filtered was treated with carbonate of lime, so as to neutralize the sulphuric acid. It was then slowly evaporated until it became nearly dry.

“To this mass rectified spirit was added, in progressive

portions, so as, with the aid of heat, to dissolve any strychnine which it might contain. The spirituous solution thus obtained was then filtered, and then gently evaporated in a porcelain vessel until it acquired the consistence of syrup. To this syrupy mass, which would contain any strychnine present in the stomach, we applied the various tests which are characteristic of that poison, namely :

“1. The test of taste. Both the spirituous extract and the spirituous solution had decided the bitter taste of strychnine. This proof we think of almost equal importance with the direct chemical tests.

“2. To a portion of the syrupy mass we applied a little pure nitric acid. This produced a red colour, showing the presence of strychnine in its ordinary state.

“3. To another portion we applied, first, a little acetic acid, and then a solution of chloride of gold. This produced a yellowish-white precipitate, showing also the presence of strychnine.

“4. To another portion we applied, first, fine concentrated sulphuric acid, and then added a solution of bichromate of potash. The result was a purple colour, changing to red, again showing the presence of strychnine. This test was varied by using the bichromate of potash powder, instead of in solution. The result was essentially the same.

“Every test was applied by each of us separately, and was repeated many times, with such variations in the mode as would detect any error or fallacy which might have crept in. The same series of tests was at the same time applied to strychnine itself, for the purpose of comparison.

“During the whole of our investigation of the stomach and its contents, the apparatus used and our tests were kept in the laboratory under lock and key, so that no person but ourselves could obtain access to them.

“By this analysis we consider the fact proved that the stomach of Mrs. Dove contained strychnine in sufficient quantity to cause death.

“GEORGE MORLEY.

“THOMAS NUNNELEY.”

The inquest having been adjourned, Mr. Nunneley was recalled, and at the opening of the proceedings read the following Report. With what took place in the Court between the legal advisers we have, of course, nothing to do.

“*Additional Report of the Analysis of the Contents of the Stomach.*—As a further test of the presence of poison in the stomach, and one which as nearly as possible would amount

to demonstration, we determined to try whether the spirituous extract obtained from the contents of the stomach, already shown by chemical tests to contain strychnine, possessed really the poisonous properties of that substance.

"We selected for experiment two rabbits, two mice, and a guinea pig, and as the most exact method of acting upon such animals with small quantities of poison, we applied it by inoculation through small openings, either into the cellular tissue beneath the skin, or into one of the serous cavities of the body; also in one of the mice, giving a portion by the mouth.

"In each of these five animals thus submitted to experiment, the characteristic effects of poisoning by strychnine were produced. In three of them (the two mice and a vigorous rabbit) death ensued respectively in two minutes, twelve minutes, and fifty minutes, from the first introduction of poison. The symptoms preceding death were, disturbed respiration, general distress, convulsive twitchings or jerkings, tetanic spasms, a peculiar outstretching of the legs, and general rigidity of the body—symptoms which are exactly those commonly presented by strychnine.

"In the fourth animal, a rabbit, the symptoms were equally well marked and decisive, but although the animal lay for a time nearly dead, it afterwards revived, and eventually recovered. In the guinea pig the effects were at first much more slight, the spasms were not so strong as to throw it down or entirely disable it; but on the following day it was found dead, with the muscles rigid and the hind legs extended, as if from the effects of the poison.

"For the purpose of comparison we conducted at the same time a parallel series of experiments on other animals with ordinary strychnine. In these animals the symptoms were exactly similar to those produced in the five acted on by the poison extracted from the body of Mrs. Dove.

"They were, as a series, not more severe, and not more rapidly fatal. These animal experiments, which add the test of physiological effect to that of the chemical reagents, decisively confirm our analysis, and, taking them in connexion with the analysis, and with the symptoms observed during life, and with the appearances noted in the body after death, they afford, in our opinion, the most complete proof that the death of Mrs. Dove was from the poisonous effects of strychnine, and from no other cause.

"GEORGE MORLEY.

"THOMAS NUNNELEY, F.R.C.S.E."

As we concur with the remarks made by the coroner, when summing up the evidence in this case, having witnessed similar effects in the horse, ass, and dog, we give them: "It is, however, very satisfactory to find that, as regards poisoning by strychnine, there are some unmistakeable and distinguishing features upon which all men of science are agreed, and these are the symptoms during life. It may be difficult to say how little strychnine will cause death, what proportion will cause a defined amount of spasmodic action, and how soon after taking it the spasmodic action will come on, and how long it will continue; but its effects during life are well marked and settled. The symptoms commence generally from five to twenty minutes after the strychnine has been swallowed. The patient is suddenly seized with tetanic symptoms, producing spasmodic contraction of the whole muscular system—the intellect is clear—the body becomes rigid, the limbs are stretched out, and the jaws so fixed that considerable difficulty is experienced in introducing anything into the mouth—the muscles of the chest are fixed by spasmodic contraction—the body assumes the state of being bent backwards—the lower extremities are extended and stiff, and the soles of the feet are concave—the skin becomes livid—the eyeballs prominent, and the pupils dilated and insensible. After several attacks, increasing in severity, death ensues from spasm of the muscles of the chest, producing suffocation. That these are the symptoms during life produced by strychnine all men of science are agreed."

Adverting to the colour-tests, Dr. Letheby says:—"As to the so-called fallacies of the colour-tests for strychnia, these also are fallacies only when the tests are improperly performed; but, to do away with all possible sources of doubt and fallacy from the action of external reagents, I may state that the putting of a little strychnia with sulphuric acid, on a piece of platinum foil, then connecting the foil with the positive pole of a single cell of Grove's or Smee's battery and touching the acid with the negative pole, terminating in a piece of platinum wire, the violet colour so characteristic of strychnia is instantly produced.

"This mode of experimenting was suggested by the fact that the colour tests for strychnia are due to the action of nascent oxygen; and so delicate is the galvanic test that it will discover the presence of the 10,000th of a grain of strychnia; and beside this, its very nature is such as to do away with all possible sources of fallacy."

The plan to be adopted, so as to separate this poison, according to Messrs Rodgers and Girdwood, is the following:—

"The tissues of the body are to be rubbed with distilled water in a mortar to a pulp, and then digested, after the addition of a little hydrochloric acid, in an evaporating basin; then strained, and evaporated to dryness over a water bath; digest the residue in spirit, filter, and again evaporate to dryness; treat with distilled water, acidulated with a few drops of hydrochloric acid, and filter; add excess of ammonia, and agitate in a tube with chloroform; the strychnine in an impure condition is entirely separated with the chloroform. This chloroform solution is to be carefully separated by a pipette, and poured into a small dish, and evaporated to dryness; the residue is moistened with concentrated sulphuric acid, and heated over a water bath for half an hour; water is then added, and excess of ammonia—again agitated with chloroform, and the strychnine will be again separated by the chloroform, now in a state of sufficient purity for testing, which can be done by evaporating a few drops on a piece of white porcelain, adding a drop of strong sulphuric acid, a minute crystal of bichromate of potash being added in the usual way; or the elegant mode proposed by Dr. Letheby can be adopted."

In bringing this article to a close, which has been extended far beyond the limits usually allowed, we may be permitted to add the following, as it seems to contain an important fact. It is a communication to the *Lancet* from F. G. Calvert, Esq., F.C.S., Professor of Chemistry to the Royal Institution, Manchester:

"Having noticed a great deal of discussion in various newspapers as to the length of time after death in which strychnine can be discovered in the stomach, I am induced to publish the following fact, which will prove that strychnine will resist decomposition in the stomach for the space of nearly one month after death.

"In 1849, several dogs of the Cheshire pack of hounds were wilfully poisoned, and one of them was brought to my laboratory for examination. From the description which was given to me of the peculiar symptoms which accompanied the rapid death of these dogs, and also from the fact that I could observe no peculiar pathological appearance in the stomach and intestines, I was led to believe that they had died from the effects of strychnine. I therefore treated the contents of the stomach as follows:—It was put to digest for twenty-four hours, with pure alcohol of specific gravity 0·840, slightly acidulated with pure hydrochloric acid. The whole was then thrown on a filter, and the filtrate concentrated and neutralized. The precipitate which was thus pro-

duced was dried and exhausted with alcohol of specific gravity 0.840. This alcoholic solution was evaporated to dryness in a water bath, and the residue treated with very dilute hydrochloric acid. This was again neutralized, and the deposit which fell redissolved in dilute hydrochloric acid. This solution was then evaporated to dryness, and the residue treated with the various tests characterising strychnine, when its presence was clearly indicated.

“As the master of the hounds attached great importance to the case, he requested me to obtain a sufficient amount of poison from the stomachs of some of the other dead dogs, that I might not only be convinced of the presence of the poison, but might also bring some of the extracted strychnine into court. To enable me to do so, several dogs were disinterred and forwarded to my laboratory, and the space of time which had elapsed from the date of death to the time when I submitted them to analysis was at least three weeks, and still I perfectly succeeded in extracting strychnine from the stomach of the dogs, and exhibiting it in the state of crystallized hydrochlorate.”

THE ALGAROBAS OR CAROUBAS.

AMONG the products from Spain, in the Agricultural Show at Paris, is the above-named article, which is one that appears very likely to prove useful to this country. It grows on a species of acacia tree, found in great profusion all along that part of the coast of Spain, and probably to be met with on all parts of the sea-coast of the Mediterranean. It is used as the principal food of horses and mules, is sweet to the taste, in shape like a podded bean or large pea, with seeds in the centre. It is the same article which has been lately imported from Egypt under the name of locusts, or St. John's bread, and which is now selling in London, as cattle-food, at about £8 a ton. It may be got in any quantity at Barcelona, at the price of 5*s.* per 100 kilogrammes, which is little more than 40*s.* a ton. It is shown also as a product of Sicily, under the name of “caroubas,” and is likely to be obtained in great abundance, if there should be any demand for it. The English seem to have put it to a wrong use in giving it to cattle, as it is exclusively applied to the feeding of horses and similar stock in Spain. We trust that this notice of it may induce some of the Spanish merchants to import it from Barcelona, as it may be sold with an excellent profit at one half the price now sought for it in

London. A cheap food for horses is one of the great desiderata of English agriculture, and would tend more than almost anything we know to diminish the cost of production, and to set free a large surplus for the consumption of man. Better far that we should import cheap horse-food and cattle-food than cheap and inferior grain as human food, thus enabling us to reserve the better qualities of grain now consumed by our horses to give bone and muscle to our agricultural population.

PROFESSIONAL MEMS.

THE Emperor of Austria, attaching particular interest to the Agricultural Exhibition of Paris, has specially appointed M. Roell, the Director of the Veterinary School at Vienna, to attend it, and send in a report of whatever comes under his observation.

In consequence of the extension of the murrain among cattle in Poland, a sanitary committee of twelve members, one of whom is a veterinary surgeon of eminence, has been appointed to each of the five governments. They are ordered to adopt the most active measures to investigate causes, and to apply remedies.—*Daily press*.

VETERINARY COLLEGE AT NEW YORK, U.S.

A BILL has been introduced in the New York legislature to incorporate the New York College of Veterinary Surgeons of the City of New York. The corporators are William Cooper, H. Williams, M.D., W. Lockhart, Thomas D. Andrews, M.D., J. Ogle, M.D., T. Nortram, C. C. Grice, and P. Green. The object is to promote veterinary science and instruction in the department of learning connected therewith. It allows them to hold and convey real estate to the amount of 100,000 dollars. It gives power to the trustees to confer the degree of V.S. (Veterinary Surgeon) on any man of the age of twenty-one years, who may have studied three years with some veterinary surgeon duly licensed, and have attended two complete courses of lectures, one of which shall have been delivered by the professors of the said college.—*New York Daily Times*.

Extracts from British and Foreign Journals.

EXTRACTS FROM THE PROCEEDINGS OF COUNCIL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At a weekly Council meeting, held the 23d of April, the following letter, received from Mr. Spooner in reference to the arachide-nut cake, was read :

“ELING, NEAR SOUTHAMPTON, *March* 31, 1856.

“In reply to your communication requesting me to furnish the Council with information respecting the price and the supply of arachide-nut cake, a sample of which I had the honour of forwarding a short time since, I beg to state that my firm (Spooner and Bailey) have imported two cargoes from Rouen, in France, since October last, and that the present price is £9 per ton. It appears to be relished more by sheep than by cattle. I think there is likely to be a fair supply of this cake, unless there should be a great depreciation in the value of feeding-cakes as well as oil, so as to render the collection of the nuts not sufficiently remunerative. It is scarcely necessary to observe, that whilst linseed-cake will probably always maintain its supremacy amongst the different feeding materials, yet it must surely be the interest of agriculturists to encourage the introduction of other feeding-cakes, such as nut-cake, poppy-cake, and cotton-cake, more particularly when such cakes are rich in the nitrogenous elements. Poppy-cake is much relished by cattle as well as sheep and appears to be very suitable for working oxen. It is rather dearer than nut-cake.

“W. C. SPOONER.”

At a Special Council, held the 16th of May, the following report was read from the Governors of the Royal Veterinary College :

ROYAL VETERINARY COLLEGE, *April*, 1856.

The Governors of the Royal Veterinary College, in presenting their annual report to the Council of the Royal Agricultural Society, have again the pleasure of congratulating them on the undisturbed harmony which has continued to exist between the two institutions. In a union such as this, the Governors find an assurance that veterinary science cannot fail in her continuous efforts of investigation into the

nature and causes of the diseases affecting the flocks and herds of the agriculturist, and thereby, while contributing to the support of one of the fundamental principles of the Royal Agricultural Society, to lend her not altogether unimportant aid in the conservation of an essential portion of the national wealth. The means which the Governors have given effect to, during the past year, have differed in no important particular from those originally laid down for their guidance, and approved of by the Society.

Lectures.—Under this head they would observe that an average number of four a week were delivered by the Professor of Cattle Pathology during the session commencing in October, 1854, and ending in May, 1855; and that a similar course of lectures is now being delivered, which will be brought to a close at the usual period. These lectures have for their exclusive object the inculcation of the principles of pathology, founded upon a knowledge of the anatomy and physiology of the ox, sheep, and pig, and they therefore embrace the nature and causes, as well as the preventive and curative treatment, of the several affections of these animals. These lectures have been regularly attended by all the pupils of the college. The Governors have also called the special attention of the class to their code of laws, which provide that the students, before presenting themselves for examination for the diploma of the Royal College of Veterinary Surgeons, shall pass a preliminary examination to the satisfaction of the Professor of each department of their studies. Provision is thus made, as the Council will perceive, for the more perfect education of the pupils in the several divisions of their studies, and from this much general good must result; for the Governors would remark that very valuable assistance to the advancement of cattle pathology is given by the other Professors of the College, whose instructions are extended to the anatomy, physiology, and pathology of the horse—to chemistry, materia medica, and pharmacy. Since the last annual report to the Council, fifty students have entered at the College; and as the time of their pupilage extends over two sessional years, an average number of eighty has been in daily attendance.

Practice of the College.—Many interesting and instructive cases of diseases have been admitted, and each of these has been made available to the general information of the pupils. The Governors, however, would be glad to see a more uniform occupancy of the sheds and boxes which they originally erected at considerable expense for the reception of cattle and sheep when the subjects of disease; and they had hoped that after the pointed manner in which they drew the atten-

tion of the agricultural body to this subject in their last report, they should now have been enabled to congratulate the Council on the large increase of patients of this class which had taken place. Every member of the Society being entitled to all the privileges of a subscriber to the College, in as far as the admission of cattle, sheep, and pigs is concerned, removes all ground of objection on the score of expense; and the Governors believe that the sole cause of the fewness in number of the patients depends rather on the forgetfulness of the members of these privileges than anything else.

Consultations and Communications.—If the admission of diseased cattle to the infirmary has not materially differed from former years, the consultations by letter and otherwise have, on the contrary, greatly increased. From all parts of the country communications have been forwarded to the College, detailing the particulars of special cases, and asking advice as to the treatment of the affected animals. Much of the Professor's time has been occupied in replying to these letters, and he has often had the satisfaction of learning that great good had resulted from the instructions which were given relative to the hygienic as well as the medical treatment of the animals in question.

Veterinary Inspection.—During the past year, and probably arising in part from the increased number of communications, the members of the Society have not asked for the personal inspection by Professor Simonds of the animals suffering from disease on their respective farms so frequently as on former occasions. The Governors desire to see this bond of connection between the two institutions extended and strengthened by a more frequent use; and they would suggest to the Council whether a modification of its rules relating to these inspections might not be advantageously adopted. Next to the admission of patients, these inspections afford the surest means of practically advancing cattle pathology. At the annual meeting of the Society at Carlisle, the general inspection of the animals was made as heretofore, and with much benefit to the interests of the Society, as several cases of illness and accident also occurred during the days of the meeting. Besides these circumstances, some of the animals had to be disqualified, from wrong entries with regard to their age, and others from the existence of hereditary diseases and defects.

Epizootics.—The chief of these maladies have been pleuropneumonia and eczema, both of which have prevailed in several parts of the country, the first-named with its usual severity. As stated in a former report, pleuro-pneumonia

belongs to a class of diseases which can be far more easily prevented than cured; and the Governors would remark that the measures they recommended for adoption as prophylactics have stood the test of further experience, and been of essential service in numerous instances of outbreaks of the malady. Inoculation as a preventive has had but few advocates, nor can the Governors believe that those who have refrained from adopting it are acting otherwise than on right principles of science; and, consequently, they have not suffered greater losses than those persons who have not had recourse to the operation. The diminution in the number of cases which, in a few isolated instances, have seemingly accompanied the introduction of inoculation, have been but singular coincidences, and are altogether due to the ordinary causes which regulate the outbreak, extension, and departure of this class of diseases.

Parasitic Affections.—These maladies, which are more or less the cause of heavy losses to the agriculturist, have been remarkably rife, and during the last summer many hundreds of lambs have fallen victims to the presence of worms in the respiratory organs. These losses have also been continued up to this time, but in somewhat diminished numbers. In too many instances nothing was done by the flock-masters to arrest the progress of the disease; nor, indeed, was its true cause often ascertained by them. The most marked symptoms of the affection are a cough (which becomes increased by exertion, and also by changes of temperature), hurried breathing, fastidious appetite, and a falling away in condition, the animals being in very many instances ultimately carried off by diarrhœa, which supervenes upon the other symptoms. In some cases death takes place more suddenly, arising from active congestion of the lungs. The exhibition of a few doses of oil of turpentine and linseed oil as an anthelmintic, followed up by chalybeate tonics, and the occasional inhalation of diluted chlorine gas, were found to be very effective remedies. To these were added, and with much advantage, the supplying the animals with a generous and varied diet, and protection against the more common changes of the weather, by folding them with hurdles stuffed with straw. The Governors have to thank a member of your Council, Mr. Fisher Hobbs, for sending to the infirmary some lambs, the subjects of this disease, which enabled the Professor of Cattle Pathology to direct the attention of the pupils to the malady in a far more practical way than he could otherwise have done. Besides lambs, young cattle have likewise suffered to a great extent from the same cause; and the like principles of treatment,

but somewhat modified to suit the altered state of things, were found equally efficient with them. The worms which inhabit this part of the organism belong to the class *Filaria*. They exhaust the strength of the animal they attack by drawing largely upon the secretions furnished by the mucous membrane of the respiratory organs, in which also they soon produce diseased action. Besides this, they cause a mechanical impediment to the free entrance of air into the lungs, and thus frequently destroy the animal from asphyxia, or in less numbers interfere with the necessary changes of the blood in its passage through these organs. They are both oviparous and viviparous, as many of the young are hatched within the body of the parent worm, while others are only brought to perfection after the ejection of the ova. Further investigations of their development, and the changes which their ova may undergo when expelled from the windpipe by the coughing of the affected animal, may probably lead hereafter to the adoption of means to prevent the frequency of their attack.

Calcareous Concretions.—So many instances of the loss of rams, in particular, have occurred from calcareous deposits in the urinary organs, as to deserve a separate notice in this report. Experience has shown, that when sheep are kept too much on a nitrogenized diet, and allowed but a limited range, a perverted state of the digestive and assimilative functions ensues, which leads to the deposit of earthy salts in the urinary system. These deposits take place in all sheep, without reference to sex, but they are of more consequence in the male animal, arising from the fact that the urethral canal, much diminished in size, passes through the vermiform appendage of the intromittant generative organ, and the deposit accumulating therein blocks up the passage, and leads to inflammation and often rupture of the bladder, from a retention of the urine. Preventive means are the most to be advocated, and these should consist in the adoption of a less forcing system to bring the animals into condition in so short a space of time; the repeated exhibition of some mild aperient medicine, and also the use of mineral acids in a diluted form, chemistry having demonstrated that these urinary deposits in herbivorous animals are mostly composed of the earthy carbonates, with some traces of the phosphates.

Concluding Remarks.—In bringing this report to a close, the Governors would express a hope that agriculturists, as a body, are beginning to find that through the efforts which have been put forth by the College in common with the Council of the Society, many young men, whose scientific

education is based upon the fundamental principles of anatomy and physiology of cattle, are being located in their several districts; and that in carrying out these principles they are no less practical in their every-day proceedings than those individuals who profess to possess hereditary knowledge, and who put forth this figment as a claim for their being consulted in cases of disease affecting our flocks and herds in particular. Such the College labours to attain, and such it hopes it has in a great measure succeeded in accomplishing.

(Signed)

THOMAS CATOR, Chairman.

Lord Berners remarked, that in all cases of disease among the farmer's live-stock, means of prevention would be found better than subsequent attempts at cure. He referred to several districts where disease prevailed to a great extent. In his own neighbourhood the remedies prescribed by Professor Simonds, and received from the Veterinary College, had been attended with almost uniform success.

Mr. Slaney objected to the growing tendency among professional men to use technical words in describing symptoms and remedies, as well as words heterogeneously compounded from the Greek and Latin. He thought that in addressing farmers plain English should at least be given.

Mr. Miles remarked, that his own flock of lambs, as well as that of his brother, had suffered loss to the amount of twenty per cent., from a sort of consumption. It commenced about the latter end of September, by the animal's sneezing, and wasting away; but invariably disappeared, even in the worst cases, as soon as the warm weather came. The heads of the sheep were found, after death, to contain two grubs in the upper part of the nostrils.

Lord Berners had lost some of his best lambs by worms.—*Farmer's Magazine.*

CATTLE PATHOLOGY.

THE Annual Report of the Veterinary College to the Council of the Royal Agricultural Society reminds us that as our live stock are being improved in breed, and forced forward to early maturity, their position is becoming the more artificial, requiring a greater amount of attention in household accommodation and feeding, while they are also becoming more liable to a certain class of diseases, when neglected. Hence the growing importance of pathology,

physiology, morbid anatomy, and the other branches of veterinary science taught at the College.

Pathology (from the Greek words *παθος*, a disease, and *λογος*, a discourse), or the science of diseases, treats, *first*, of the naming and arranging of diseases into classes, orders, genera, &c.; *second*, of the predisposing and exciting causes of disease; *third*, of the signs and symptoms by which the disease is marked; *fourth*, of the changes of structure effected, involving physiology, or a comparison with the same functions and structure in a state of health; *fifth*, of the necessary treatment to effect a cure; and *sixth*, and lastly, of morbid anatomy, when cases terminate fatally.

Pleuro-pneumonia, and other inflammatory complaints affecting the respiratory functions, with certain parasitic diseases, appear to have been very prevalent during the period embraced by the report; and, from the discussion which followed its reading, are so still in several provinces. In Lincolnshire, and some others, for example, they appear so obstinate and confirmed in character, setting defiance to the exhibition of medicine, that farmers are giving way to despondency, leaving affected animals to the *vis medicatrix Naturæ*, or "curative force of Nature," as it has rather not inaptly been termed.

In all inflammatory cases, and, indeed, in diseases of every kind, the old adage, "prevention is better than cure," is applicable—a fact specially alluded to in the College report. This arises from the indifference manifested by cattle when first affected, and the consequent difficulty experienced by farmers in recognising disease, and applying a timely remedy. The moment man feels the predisposing causes beginning to act, he applies to his medical adviser for relief, communicating to him many things which otherwise he could not ascertain at this period from any symptomatic evidence. As soon as a change of structure begins to take place, indications manifest themselves enabling him to prescribe, but not with the same degree of confidence and success as at an earlier stage, while the sufferings of the patient are greatly increased. And before even the first sensations are felt, man, from being endowed with rational faculties, and knowing his own constitutional characteristics, and what course of dieting is necessary to preserve health, is able to adopt the same. These infirmities, too, generally hereditary, are often themselves chronic diseases of the most loathsome kind, liable to assume an acute form, or terminate in others of a more malignant nature. Take scrofula as an example, where the whole lymphatic system is in a diseased state of action, more intense

at certain seasons of the year than at others, and where the action not only predisposes the system to inflammation, but gives to it a more obstinate character. Again, a plethoric constitution, or a system overloaded with blood, disposes it to inflammatory affections, as pleuro-pneumonia, apoplexy, &c. In this case the diet should be cooling, temperate in amount, and regular as to meals, accompanied with gentle exercise, the liberal use of the flesh-brush to keep the insensible perspiration up, and an active aperient occasionally, especially in early spring and autumn. The opposite temperament of this,—viz., the phlegmatic or verminous—has an excess of serum in the blood and cellular membrane, and predisposes the system to worms and morbid secretions; consequently, as a prevention, a warm strengthening diet is recommended. Then we have gouty, rheumatic, and nervous temperaments, requiring their respective modes of dieting to keep down their action to the lowest degree of tensivity. In all these cases, experience has taught man the truth of the adage, and therefore he acts accordingly. The brute creation in a wild state, too, is often guided by instinct to pursue a similar course, by selecting various medical herbs for food, eating earth, going great distances to drink sea-water as a vermifuge, and the like; but with domesticated animals, under our artificial systems, no such privileges are enjoyed, while the poor brutes are, on the contrary, induced by a thousand pampering means to increase the action of constitutional disease. And in addition to constitutional maladies of the above nature, the stomach of man is frequently either in an alkaline or acidulous state, requiring antacids and antalkalies to correct them; and such are always better given in food containing these in their natural state—as lemon-juice or sour milk—than in the shape of crystallized acids or alkalies, as citric acid and lactic acid, from the shops. Such is the case of man; and analogous to it will be found that of our domesticated animals.

To prevent pleuro-pneumonia, therefore, farmers should watch narrowly the prognostics of plethoric animals, and pay attention, in time, to the kind of regimen or food, and grooming, they require, especially when they are constitutionally of scrofulous habits.

Again, to prevent worms in the windpipe, a disease very prevalent at present, phlegmatic animals should be narrowly watched, and a warm, stimulating, and strengthening diet given in time, such as a liberal allowance of oil-cake or linseed-meal and India-corn, with a suitable seasoning of salt and bitter herbs as tonics—the latter more especially for

sheep, as they, when left to roam in the natural state, consume large quantities of bitter herbs, many of which are anthelmintics. Parasites on the skin are also common in constitutional habits of this kind, and therefore a similar course of prevention should be adopted in time.

Special notice is also drawn to urinary calculi, generally of the calcareous and phosphatic kinds, in sheep, attributed to too nitrogenous a diet.

There is yet too much diversity of opinion as to the cause of calculous deposits of this nature, to hazard a conclusion as to what kind of diet should be used to prevent them. The more sound philosophy appears to be that they are the result of disease, most probably, of the absorbent and secretory functions, for in themselves they cannot be a disease, nor the cause of injury to the kidneys, ureter, bladder, or urethra, until once they exist. Such being the case, we have to prescribe a diet calculated to promote the healthy action of these functions, and this is more likely to be accomplished by the exhibition of bitter tonics, with diuretics when required, than a less quantity of nitrogen in the food.

During the discussion which followed the reading of the report, the chairman, Mr. Miles, M.P., drew the attention of the Council to consumption and *œstrus ovis* (if we understood him aright), as being very prevalent in several flocks this year.

Consumption or phthisis is an hereditary disease; and whenever it assumes this type, the best plan is to change the breed without delay.

Pneumonia, or inflammation of the lungs, when accompanied with a scrofulous habit, frequently terminates in phthisis, sometimes with a slow, incipient, lingering action, but more frequently the very reverse, carrying off its victim in an incredibly short time.

Scrofula being an hereditary disease, the same rule applies to this case as the last—a change of breed.

The bot in the frontal sinuses of the head of sheep is not, strictly speaking, a disease, but it may or may not be the cause of one; while, on the contrary, it may even prevent disease.

In illustration of this apparent anomaly, we have first to observe that this bot is the larva of the *œstrus ovis*; that the frontal sinuses of the sheep are their natural winter quarters, and that they thrive here, feeding on the mucus secreted from the membrane to which they attach themselves, without doing any apparent harm, from the time they enter to April and May of the following year. In crawling up and down

the nostrils to and from the sinuses it is otherwise ; for at those periods, and especially the latter, they greatly annoy the sheep, giving rise to a degree of excitement in nervous temperaments which in a few days often creates alarm in the mind of the shepherd. When, however, the sheep possesses a plethoric constitution as well as a nervous one, or the former only, and is highly fed, and in that condition liable to inflammatory attacks of the respiratory functions, this excitement may counteract, or rather prevent pneumonia, pleuro-pneumonia, or other inflammatory affections ; and when the bots are once expelled from the nostrils, it has long been observed that such sheep fatten very rapidly. But if they are seized and the attack prove fatal before the bots have loosened their tentacula or hold from the membrane of the frontal sinus, no counteracting excitement will be experienced, while they (the bots) will be found there by the morbid anatomist.

Whether sneezewort (*Achillea ptarmica*), or any other sternutatory, could be given to sheep to promote the discharge of bots in nervous and phlegmatic cases, where excitement does harm, is for the Veterinary College to say ; but in plethoric constitutions it would appear that “let alone” is the way to comply with the adage.

There are several other maladies and topics we had intended to notice, but having exceeded our limits already, these we must defer to a more convenient season, meantime thanking the governors of the Royal Veterinary College for their report.—*Farmer's Magazine*.

THE CHEMICAL CONSTITUENTS OF SOME GLANDULAR SECRETIONS.

FROM a series of elaborate investigations, which are fully detailed in the *Annalen der Chemie und Pharmacie*, Gorp-Besanez has arrived at the following conclusions respecting the constituents of glandular fluids :

1. The thymus and thyroid glands, and the pancreas, as well as the liver and the spleen, contain a more or less considerable quantity of leucine. This substance appears to be very generally distributed in the glandular system ; for besides having been found by Frerichs, Städeler, and Cloetta in the above-named glands, it has also been detected in the salivary and lymphatic glands, the lungs, and the brain. By far the greatest quantity of leucine exists in the pancreas. In this

respect, the observations of Virchow, Frerichs, and Städeler agree.

2. Tyrosine does not constantly accompany leucine in the organismus. I have only been able once to find it in the pancreas. It appears, as the observations of Frerichs and Städeler show, to exist frequently under certain conditions, but was not found by them to be a constant companion of leucine, and consequently there seem to prevail analogous relations with regard to the existence of these bodies, as in the obtainment of tyrosine with leucine by the treatment of albumen with caustic alkalies, where it depends chiefly on the duration of the treatment whether leucine besides tyrosine is obtained, because by a further continuance of the decomposition the tyrosine is destroyed.

3. In the spleen there is, besides leucine, a body probably homologous to it, and another whose nitrogen amounts to 9.09 per cent., agreeing very nearly with a body which Frerichs and Städeler found crystallized in urine, and was very analogous to tyrosine, with which they believed it to be homologous, as it contained 8.38 per cent of nitrogen.

4. In the pancreas of oxen, there exists in considerable quantity a body of the formula $C_{11}H_{11}NO_4$, homologous to leucine and very analogous to it. Whether this body is a constant constituent of that gland, or is only formed in it under certain conditions, could not be ascertained. From my observations and those of the above-mentioned investigators, it would seem that leucine, as well as tyrosine, exist frequently associated with bodies homologous to them.

5. Scherer's hypoxanthine was with certainty detected not only in the spleen, but also in the thymus and thyroid glands. On the contrary, uric acid, with the exception of the spleen, was sought for without avail in all the examined glands.

6. Volatile acids of the formula $n(C H) O_4$ were contained in all the examined glands. In the thymus gland, formic and acetic were particularly found, the latter in preponderating quantity.

7. In the thymus gland of calves, in the spleen and in the thyroid gland of oxen, succinic acid was detected. On the contrary, in the liver, the pancreas, the kidneys, and the lungs, this acid could not be found.

8. The inorganic constituents of the thymus gland of calves consist, for the greater part, of alkaline chlorides and phosphates. The quantity of potash amounts to about three times that of soda; the quantity of phosphoric acid was about double that of chlorine. The quantity of magnesia preponderates over that of lime. Sulphuric acid is present in

the thymus gland only in the smallest possible trace. These proportions well agree with those of the ashes of flesh.

9. Kreatine, kreatinine, inosite, sugar, urea, glycine, and inosinic acid could not be detected by me in the examined glands.

THE ACTION OF AMORPHOUS AND ORDINARY PHOSPHORUS ON THE ORGANISMUS.

To a strong dog, Orfila and Rigout gave ninety grains of amorphous phosphorus, in doses of thirty grains each for three days. On the fourth day they administered seventy-five grains. After the expiration of seven days, no unfavorable symptoms having appeared, they gave daily thirty grains for thirteen days. The dog still remaining perfectly healthy, they introduced into the stomach thirty grains of ordinary phosphorus, and tied the œsophagus. The dog died the same day. As long as the dog took amorphous phosphorus it could not be detected in the excrements, but when the ordinary phosphorus was administered, the excrements were charged with phosphorescent vapours. They also gave to a young dog 750 grains, finely divided in olive oil. The animal scarcely lived a quarter of an hour.

To another strong and healthy dog they administered 150 grains of amorphous phosphorus. The dog did not eat his usual food on that day, but exhibited no signs of sickness. Two days afterwards 750 grains of amorphous phosphorus were given to the same dog: he swallowed his meat at once, but soon began to vomit. On the same day he was again vigorous, and ate with a good appetite. After four days he took daily, for four days, 300 grains of amorphous phosphorus, and then for three days 750 grains each day, with his food. After the administration of this large quantity of amorphous phosphorus, the dog enjoyed a good appetite, and the vomiting did not reappear. Some few days after taking the last dose he was killed. Not the slightest injury had occurred to the intestinal canal; the œsophagus, stomach, and intestines appeared of a red colour, which could only originate from the amorphous or red phosphorus.

Orfila and Rigout, on another occasion, gave thirty grains of ordinary phosphorus, pulverised by means of water, to a strong dog. In twelve hours the dog was dead. To ascertain whether the phosphorus would remain free in the intestines, the dog was not opened for fourteen days. It was observed

that the dog was still perfectly free from putrefaction, while another dog, not killed with phosphorus, but placed in the same position, was in a state of decomposition.

In the stomach and œsophagus of the poisoned dog was found a yellow, frothy substance, impregnated with the vapours of phosphorus. This substance, when heated, afforded a white flame and dense vapour, showing thereby the presence of free phosphorus. The mucous membrane of the œsophagus and stomach had a strong red colour. By agitating the fluid of the stomach with sulphuret of carbon, the authors found that after filtration the liquid separated into two layers, one watery, and the other oily—the latter consisting of the solution of phosphorus in sulphuret of carbon, from which the phosphorus may be again separated as a residue by spontaneous evaporation.—*Lancet*.

NEW TEST FOR ALBUMEN, CASEIN, FIBRIN, AND GELATIN.

ACCORDING to Humbert, the above-named substances exhibit a characteristic behaviour to Trommer's sugar test. For example, when a solution containing albumen is first mixed with caustic potash, and then with the copper solution it acquires a violet colour; this coloration has much resemblance to that of a solution of hypermanganate of potash. The origin of the albumen has no influence on the reaction, or it results as well with the albumen of eggs as with that of blood, &c. If the fluid be rich in albumen, the reaction appears in the cold; in other cases it is necessary to employ heat. One per cent. of albumen can be thus recognised.

Fibrin, casein, and gelatin, afford very similar results, only with fibrin and casein the boiling must be continued longer to bring these substances into solution. With coagulated albumen the reaction can also be produced when it is previously dissolved in caustic potash.

Fibrin gives a more wine-red and gelatine a more blue-red coloration. If an acid be added to the coloured fluid obtained from one or other of these substances, the gelatinous liquid is decolorized without any turbidity resulting. With the like solutions of fibrin, albumen, and casein, a decolorization also ensues, but at the same time a white turbidness. With albumen and fibrin the precipitate is homogeneous and adhering, but with casein it is curdled.—*Reports of the Progress of Chemistry, by W. Bastick, Esq., in the Lancet*.

THE VETERINARIAN, JULY 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE LATE CONVERSAZIONE.

WE feel assured that with equal, if not increased pleasure, most of our readers will have perused the report of the second Soirée given by the late President of the Royal College of Veterinary Surgeons, W. Field, Esq., to the members of the profession, as that which accompanied the reading of the first.

Although these meetings are not absolutely new with us, yet are they novel so far as the College of Veterinary Surgeons is concerned; while to Mr. Field the merit is due of reviving that which had been for some time abandoned, and we can only express our sincere hope, that as they have been so liberally and spiritedly resumed, they may not, for any trifling cause, be permitted again to drop, since such associations cannot fail materially to advance us as a profession in the estimation of all scientific men; while they may be considered as the cement that binds us together as a body.

It was extremely gratifying to see so many strangers present by invitation on the last occasion, and to witness the cordiality of feeling manifested by them. Science is world-wide, and necessarily awakens in the mind a liberality of sentiment among its votaries, as well as a desire for co-operation. Moreover, there are but few divisions of natural philosophy which may not, in some measure or degree, be brought to the aid of veterinary medicine; hence the reason why each should have had its representative there.

The suggestion we had contemplated making in reference to these reunions, but which we were prevented doing in a late number, owing to press of matter, was that a paper should be read at them, on some interesting, attractive or popular subject; certainly not of any length, but containing

facts of importance connected with the profession. This would serve for a topic of conversation afterwards, and probably elicit from one and another observations of no little worth. We would not, however, have these meetings clogged with the formality of a debate. By some such expedient as this being adopted, it might be hoped that a greater number of our professional brethren would be induced to come amongst us, thus giving to us both encouragement and support. It may be that he who first essayed the performance of this task would do so with some apprehensions. Yet why? The act itself would disarm all criticism, and could not fail to be met with feelings of grateful approval. The difficulty only would be, what subject to select so that all present may feel some interest therein. Nor need the author be confined to the veterinary profession, although it would be only consistent that one from that body should take the lead. And surely there are those among us who are not only equal to the duty, but solicitous to be called upon to perform it; or should any hesitation be evinced, then the president, for the time being, might be requested to introduce a subject, or to give the details of any unusual case or cases that may have occurred in his practice during the year; an emergency which we can scarcely anticipate.

Were we again permitted to express any regret and disappointment connected with the past meeting, it would be only in reference to what has been already adverted to,—namely, the fewness of the members of our profession present, as compared with those of the sister profession. For more reasons than one, we are sorry that this should have occurred. We have always maintained that an intimacy with the other profession is most advantageous to us; and that by it we are helped onwards, and, at the same time, held in higher estimation by the public. Nor have we ever witnessed any backwardness on the part of those whose support we are thus desirous of obtaining. Why, then, this indifference, to say the least of it, which exists on the part of the veterinary profession to associate together upon such occasions as those lately offered?

We almost fear it will be said that we have commented on this subject *usque ad nauseam*, and that, like "a thrice-told tale," our remarks have become weak and pointless, and all our endeavours will prove futile. But we are really apprehensive that as "like engendereth like," so this same spirit will, ere long, be communicated to the directing body of the profession, the Council; and if so, it were better that the Charter of Incorporation had never been obtained; for the expense and the labour attending its procurement will have been all thrown away, and our weakness, as a body, made even more manifest to the scientific world.

The Council must necessarily feel the responsibility of the position they occupy; and while they are gratified at the confidence that has been placed in them, they are anxious so to act as to secure the approval of those by whom they are trusted, regardless alike of the time required for the performance of their duties, and the inconvenience to which they are often put in doing them; not to say anything of the cost which is incurred by those living at a distance from town. They know, too, that the eyes of the profession, as a body, are on their acts, which they are extremely desirous of bringing to a successful issue; but this they cannot hope to achieve, unless they meet with co-operation and assistance from without. Coldness, or even lukewarmness, therefore, will prove doubly disastrous; and most sincerely do we hope that our fears may not be realised. Rather may we have been the humble instruments of exciting a spirit of energy and of union amongst us, coupled with a unanimous resolution so to act as to attain to that position which must be earnestly desired by all who think rightly.

We are very solicitous that those who have now the direction of affairs should lay the foundation of the building so firm, that when in after years it shall be tested by the plumb-line and rule of experience, it may be declared to have been "well and duly fixed." Men holding high and responsible offices have it in their power to contribute much to the advancement of the art or science with which they are connected; and in proportion as their acts are influenced by this determination will be the amount of respect entertained

towards them, as well as the good accomplished by them. They may be sure that as the eyes of their brethren are ever on them, so their conduct will often determine that of others. Each succeeding year is removing the older members of the profession from among us; soon, therefore, on the junior ones will be thrown the responsibility of raising much of the superstructure, and on the energy and zeal shown by them will depend the future progress of the building. But if the foundation be not securely laid the building cannot stand; fall it must, although for a time, perhaps, it may receive occasional support by props from influential individuals; still the result is inevitable, and then retrocession will take place, and our condition will be much worse than ever it was; for it should be remembered that we do not merely return to the *status quo ante*; but far below it, for science has become degraded by us, and it has been shown that quacks or pretenders are to be preferred to the educated man, for the treatment of diseases in the lower animals; also that empiricism is better than practice founded on correct principles. Then, too, all conjecture and doubt will have been removed from the line of the poet:

“If ignorance is bliss, ‘tis folly to be wise.”

We would, therefore, that those who are to follow us should have to contend with no ill-laid plans, and unwisely devised schemes, but rather that in the work they will have to perform, they should have nothing to do but to proceed to perfect that which has been well begun, thus securing to the body the advantages resulting from union among its members. We are no destructives. We would not pull down what has been already built up; but we are jealous lest that be not done which ought to have been at the onset, and by which both expense and labour will hereafter be spared. A step has been taken in the right direction; some advance has been made, and all that is required to ensure success is a determination to continue to act, guided by right judgment. The wise man has said “He loveth transgression who loveth strife,” and we have no desire to be ranked among this number.

Would there were more of the *esprit de corps* amongst us ! We are altogether at a loss to account for the apathy which seems to exist in the profession. Surely it cannot be that any are satisfied with the position to which it has attained, since this does not even approximate what we hope to see it reach, and to which it has a right ; far less have we arrived at that period when we are justified in indulging in a spirit of indifference from an impression that nothing remains to be done, or that we are already perfect. All around us bears indications of progress, and "Onwards ! onwards !" is the password. At the present day, science and art cannot stand still. Were they to do so, virtually we should retrograde, and the civilized world would quickly go back to the puerilities and vague conjectures of the mediæval age ; when facts were lost sight of in fanciful theories, and crude speculation usurped the place of inductive reasoning. With us it would be, that we should return to the dark days of farriery and the absurd practice of the pretender, having no principles to guide us, nor a "why and a wherefore" to assign for any of our actions ; the *no* school would then be paramount, and the preceptor ignored.

THE AMERICAN VETERINARY JOURNAL.

A SHORT time since we received, and noticed with commendation, the first two or three numbers of the above journal, forwarded to us, as we presumed, by its editor, G. H. Dadd, M.D.

We hailed it as an omen for good, and had hoped that our professional cousins, with their noble field before them, would have early entered on its cultivation, and caused it to yield fruit in rich abundance. They might have done so, and thus have aided in the good cause. Judge our disappointment, not unmingled with disgust, at receiving a packet from America, of handbills, of which the following is a copy :

DADD'S

CELEBRATED

LINIMENT:

A Cure for Rheumatism, Lumbago, Sciatica and Tic Doreux.

The Proprietors of this valuable Preparation respectfully request the public to give this article a trial in the above and all similar complaints. It has performed some of the MOST WONDERFUL CURES on record, both in the human and brute creation. Many who have used it, *after all other articles have failed*, are ready to testify to its astonishing curative powers. It is the architect of its own reputation, and only needs a trial to *prove* its great superiority over all other preparations for like disorders. The basis of this preparation was first used, in combination, by the celebrated G. Bott, of Nottingham, since which time Dr. Dadd has made valuable additions, which his experience in physiological practice has rendered him competent to do. With these valuable additions, it is with the greatest confidence that we ask the public to give it at least one trial; we have never, in a solitary instance, known the purchaser to be disappointed. Price for large bottles, \$1; medium, 50 cents; small size, 25 cents.

For Sale in all the principal Towns throughout the United States and Canadas,
WHERE MAY BE OBTAINED

DADD'S HORSEOWNER'S GUIDE;

OR, SYNOPSIS OF VETERINARY PRACTICE,

WHICH WILL ENABLE EVERY MAN TO BECOME HIS OWN HORSE-DOCTOR.

TOGETHER WITH

DADD'S HORSE AND CATTLE MEDICINES,

Which have given universal satisfaction, and have been the means of palliating and relieving some of the most complicated forms of disease in animals. For general information on the causes, symptoms, and treatment of the diseases of horses, and particular directions for the application of his Medicines, see Dr. Dadd's latest work, entitled the 'Horseowner's Guide,' which can be had of agents generally, for 12½ cents per copy.

The following List comprises some of the most valuable Compounds ever offered to the Public:
Physic Balls. 50 cents per box.

Condition Powders, for Bad Condition. 50 cents per box.

Heave Powder, for all Diseases of the Lungs. The only article that will effect a permanent cure, as our testimonials will prove. 50 and 25 cents per box.

Urine Powders, for all Obstructions of the Bladder and Kidneys. 50 cents per box.

Worm Powders, for the Removal of Worms from the Intestinal Canal. 50 cents per box.

Healing Balsam, for Wounds, Cuts, Bruises, Saddle Galls. This article has been used with great success on Men as well as Horses. Price 50 cents per bottle.

Distemper Powders, for all Malignant Epidemics. Price \$1 per bottle, or 50 cents per box.

Liquid Blister, for Spavin, Ringbone, and all Bony Enlargements. Price 75 cents per bottle.

Horse Liniment, the most celebrated article known in England, for lameness of every description. Price \$1, 50 cents, and 25 cents per bottle.

Mange Ointment, for Scratches, Old Sores, &c., 50 cents per pot.

Hoof Ointment, for Contraction of the Feet, Brittle Hoof, Thrush. Price 50 cents per pot.

Hair Ointment, for Promoting the Growth of the Hair, 50 cents per pot.

PREPARED UNDER THE SUPERINTENDENCE OF G. H. DADD, MD.,

PRACTITIONER OF VETERINARY MEDICINE AND SURGERY.

REED, AUSTIN & CO., 34, India Street, Boston, Proprietors.

AN AGENCY

HAS JUST BEEN ESTABLISHED IN THIS TOWN.

By way, we suppose, of attractive embellishment, on either side of this document are coarse woodcuts of two horses, one saddled and bridled, and apparently prancing in the restlessness of desire to be mounted by his rider, above and under which is written, "This horse was cured by Dadd's medicine." On the other side, as its antitheton, is another horse represented as sick and emaciated, with drooping head and tottering limbs, and above and below is written, "This horse was bled, and dosed with antimony, &c."

In common charity we can only hope that some one has assumed Dr. Dadd's name. Should it be otherwise, we can only say, Shame on it! This is not the way to advance Veterinary science, or to cause its practitioners to gain the respect and confidence of the public. Heartily, and from our soul, we loathe empiricism, believing it to be a false system, and one subversive of all medical progress. We, therefore, unhesitatingly condemn it, and regret being obliged to blot our pages even with its condemnation.

But are we, we would ask, quite free from it at home? Are there none among us who disgrace themselves by the adoption of a similar course of procedure, and those qualified members of the profession too? Let the many advertisements in the provincial and other papers, which reach us from time to time, of rival "condition balls," and "ointment for the removal of splints, curbs, and spavins," supply the answer. And here we leave the subject, for it is not ours to dictate to others how to act so as to obtain the means whereby to live, only hoping, that those who do thus act, may not hereafter have to contend with an accusing conscience telling them that they have sacrificed their profession and its advancement to the love of gain, the love of money being with them stronger than the love of science.

"Lost in the world's wide range, enjoined no aim,
Prescribed no duty, and assigned no name."

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, MAY 29, 1856.

PRESENT:—Messrs. Braby, Burley, Cherry, Ernes, Field, Gabriel, Goodwin, Jones, Legrew, Pritchard, Robinson, Silvester, Stockley, J. Turner, Varnell, Wilkinson, Withers, Professors Spooner, Simonds, and Morton.

W. FIELD, Esq. in the Chair.

The Minutes of the previous Meeting were read and confirmed.

Letters were read from Mr. Dickens and Mr. Peech, regretting their absence in consequence of ill health.

Prof. Spooner proposed that Mr. Stockley should be elected as president for the ensuing year. He regretted the want of unanimity in the Council on the subject. Mr. Turner, the candidate who was also about to be proposed, was in every way worthy of the honour to which he aspired; but he considered that Mr. Stockley, from his seniority (being in his 81st year), and the position that he occupied in the army, had a prior claim. Had Mr. Stockley been elected last year, he (*Prof. Spooner*) would have gladly supported Mr. Turner on the present occasion; but he felt that he should be acting a dishonorable part, if, considering the result of the last election, he now withdrew from the support which he and his colleagues then tendered to Mr. Stockley, who had always energetically exerted himself for the best interests of the profession.

Mr. Pritchard proposed Mr. J. Turner, whose name, he said, was enrolled as a member of Council on the foundation of the Charter in 1844, while Mr. Stockley's did not appear in the list of members till 1853.

Prof. Simonds mentioned that Mr. Stockley was abroad, and did not return to England till nearly the time when his name appeared among the members of Council. He (*Prof. Simonds*) was actuated by no unfriendly feeling towards Mr. Turner; but he felt that he should not be pursuing a straightforward course, if he withheld from Mr. Stockley the support which he gave him at the last election.

Suggestions were made by Mr. Braby, Mr. Withers, Mr. Wilkinson, Mr. Robinson, and Mr. Goodwin, with a view to some arrangement being made, which should relieve the

council from the invidious task of selecting between the two candidates.

Mr. Stockley and *Mr. Turner* having both declined to withdraw, a ballot was taken, the result of which was:—

For <i>Mr. Stockley</i>	10
For <i>Mr. Turner</i>	7

Majority for <i>Mr. Stockley</i>	.	.	3
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The following gentlemen were elected as Vice-Presidents for the ensuing year:—Messrs. Langworthy, of London; Shorten, of Ipswich; Constant, of London; Baker, of Cheltenham; Sparrow, of Cambridge; and McKenna, of Belfast.

Professor Spooner nominated *Mr. Gabriel* as Secretary for the ensuing year, observing that it would be a work of supererogation to make any remarks as to the manner in which that gentleman discharged the duties of his office.

A ballot was then taken, and *Mr. Gabriel* was declared duly elected.

Mr. Field vacated the Chair, which was then taken by *Mr. Stockley*.

Mr. A. Cherry proposed a vote of thanks to the retiring president, for whom he said (notwithstanding occasional differences of opinion) he entertained that respect and esteem which every man merited for the upright and conscientious discharge of his duties.

Professor Spooner seconded the motion, and said he was sure that every member of the Council and the profession would feel that *Mr. Field*, in retiring from the honorable position which he had held, would carry with him into the bosom of his family the most sincere respect and gratitude for the manner in which he had performed the duties of his office.

The resolution was carried by acclamation.

Mr. Field, in thanking the council, said he hoped his successor would do more than he had been able to accomplish to benefit the profession, aided as he would be by the position which he occupied in the army and in society.

Messrs Legrew, Morton, and the Secretary, were named as the Committee of Supervision, and the proceedings terminated.

J. LEGREW, V.S, 2d Life Guards.
W. J. T. MORTON.
E. N. GABRIEL.

Veterinary Jurisprudence.

MIDLAND CIRCUIT.—WARWICK, MARCH 24.

Civil Side.—(Before LORD CAMPBELL and a Common Jury.)

EMERY *v.* PEAKE.

This was an action against a clergyman for keeping a dog accustomed to bite mankind.

Mr. Bittleston and *Mr. W. H. Adams* appeared for the plaintiff, *Mr. Serjeant Hayes* for the defendant.

The plaintiff is a working gardener living at Aston, near Birmingham, and the defendant is the vicar of the same parish. On the 16th of March in last year the plaintiff was walking home, when she saw Mrs. Peake come out of a house where she had been visiting some sick poor. She was accompanied by two dogs, who immediately flew up at the plaintiff and commenced an attack upon him, one before and the other behind. He defended himself from them with his hands for a short time, but at last one of them bit him in the leg, a little way above the ankle. These dogs were produced in court; they appeared to be of the Skye terrier or Dandie Dinmont breed, and bore the characteristic names of "Mustard" and "Pepper." The plaintiff called out, "Oh, dear, I am bit!" and the lady went up to him and expressed her sorrow for what had happened. The plaintiff went home as well as he could, and then found that his leg had bled very much. He endeavoured at first to cure it for himself, but the leg got worse, and on the 30th of March he was obliged to call in a surgeon, who found one deep sore and two smaller wounds in his leg, and who continued his attendance for about two months. The plaintiff had for a long time been incapacitated for digging and gardening work, and up to the present time even his leg was not quite well. About three weeks after the occurrence, he called upon the defendant, and wished to see him upon the subject of his accident; but the defendant sent him out half-a-crown, and refused to see him. Several witnesses were examined on behalf of the plaintiff to show that these dogs had previously attacked and bitten other people, and, among others, the butcher who served the defendant's family, as well as his son, had been bitten at, and had their trousers torn by the dogs in the vicarage-yard, though their boots saved their legs, and

these witnesses had made complaint to the defendant's servants.

Mr. Serjeant Hayes, in the course of his address to the jury, contended that there was no evidence upon which a jury could act, either that these dogs were ferocious or that the defendant had any knowledge of their being so, or of their having bitten any one before ; and he thought that, if a verdict should be found for the plaintiff, it would produce the greatest consternation among the ladies on account of their favorite lapdogs. There were very few dogs against whom as strong a case of ferocity might not easily be made out, and, indeed, against the whole race the charge had been made that "dogs delight to bark and bite, for 'tis their nature to." He should show, however, that these were more than usually well disposed.

Mr. and *Mrs. Peake* were examined as witnesses, and gave the dogs a general good character. *Mr. Peake* did not remember that he had ever heard any complaints of their having attacked any one ; but *Mrs. Peake* had heard of their tearing the butchers' trousers. Other witnesses were also examined, who had not heard anything against the peaceable disposition of *Mustard* and *Pepper*.

Lord Campbell summed up the evidence, and

The jury, having remained in deliberation some time, found a verdict for the plaintiff.—Damages, 60*l*.

MISCELLANEA.

HORSE POWER.

THE power of a horse is understood to be that which will elevate a weight of 33,000 pounds the height of one foot in a minute of time—equal to about 90 pounds at the rate of four miles an hour.

THE LONG AND SHORT OF IT.

A LADY passing through New Hampshire, observed the following notice on a board:—"Horses taken in to grass. Long tails, three shillings and sixpence ; short tails, two shillings." The lady asked the owner of the land the reason for the difference of the price. He answered:—"You see, ma'am, the long tails can brush away the flies, but the short tails are so tormented by them that they can hardly eat at all."

FACTS CONCERNING ARSENIC EATING.

IN some parts of Lower Austria, in Styria, and especially in the hilly country towards Hungary, there prevails among the common people an extraordinary custom of eating arsenic. During the smelting of lead, copper, and other ores, white arsenic flies off in fumes, and condenses in the solid form in the long chimneys which are usually attached to the smelting-furnaces. From these chimneys, in the mining regions, the arsenic is obtained, and is sold to the people by itinerant pedlars and herbalists. It is known by the name of *hidri*, and the practice of using it is of considerable antiquity. By many it is swallowed daily throughout a long life, and the custom is even handed down hereditarily from father to son. Arsenic is thus consumed chiefly for two purposes—first, to give plumpness to the figure, cleanness and softness to the skin, and beauty and freshness to the complexion; second, to improve the breathing and give longness of wind, so that steep and continuous heights may be climbed without difficulty and exhaustion of breath. Both these results are described as following almost invariably from the prolonged use of arsenic either by man or by animals. For the former purpose young peasants, both male and female, have recourse to it, with the view of adding to their charms in the eyes of each other; and it is remarkable to see how wonderfully well they attain their object, for these young persons who adopt the practice are generally remarkable for clear and blooming complexions, for full rounded figures, and for a healthy appearance. For the second purpose—that of rendering the breathing easier when going up hill—a small fragment of arsenic is put into the mouth, and allowed to dissolve, which it does very slowly. The effect is described as astonishing. Heights are easily and rapidly ascended, which could not otherwise be surmounted without great difficulty of breathing.—*Professor Johnson's Chemistry of Common Life.*

OBITUARY.

Died, May 30th, aged 25, David Horsburgh, V.S., Dalkeith.

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Communications and Cases.

ON THE FORMATION OF SUGAR IN THE LIVER
OF ANIMALS.

By W. CAMPS, M.D.

THE last number of the *British and Foreign Medico-Chirurgical Review* contains the following remarks upon the production of sugar in the liver of the horse and dog, as the results of certain experiments in reference to this inquiry, made by C. G. Lehmann, in Germany, and by Claude Bernard, in France. Lehmann's experiments were made partly on horses, killed five hours after the last meal; partly on dogs, of which some had been killed in the fasting state, others five hours after a meal of raw meat, others after one consisting of boiled potatoes. The blood of the portal vein of the dogs killed in the state of fasting, and of those fed with raw meat, contained no sugar; that of the horses, and of the remaining dogs, namely, those fed with potatoes, only a small quantity; while the blood of the hepatic vein exhibited, in all cases, a very large amount. Lehmann attributes the origin of the sugar formed in the liver, in part at least, to the fibrin and albumen, the proportion of which is diminished in the blood of the hepatic vein. His repeated experiments confirm the fact pointed out by Bernard, that the arterial blood is usually free from sugar; that only when the venous blood in the right ventricle contained three per cent. of sugar or more, as in cases of diabetes mellitus, a part of the latter passes into the arterial blood.

Claude Bernard took the liver of a dog fed exclusively on meat, immediately after death by section of the medulla oblongata; he washed it out by a continued stream of water through its vessels, so completely, that it was quite exsanguinous,

and that the decoction of a piece of it did not any longer yield a trace of sugar. When he examined the remainder of this liver after twenty-four hours, he found it to contain a very large amount of saccharine matter. From this simple experiment, frequently repeated with the same result, Bernard concludes, that the sugar is not formed, as other physiologists have suggested, by a kind of catalytic action, exercised by the glandular tissue on a constituent of the blood, while it circulates through the liver, but by the metamorphosis of a substance contained in the tissue of the liver itself. The same experiment shows, that this substance, which is to be transformed into sugar, is insoluble in water, in alcohol, and in ether; that its transformation into sugar is commonly effected within twenty-four hours; that it is accelerated by pre-exposure to atmospheric air; and that, on the other hand, this faculty of undergoing the change in question, is occasioned by the process of boiling. Claude Bernard remarks, that in the state of health, this substance is constantly reproduced in the tissues of the liver, and as constantly afterwards transformed into saccharine matter.

ON POISONING OF PIGS WITH BRINE.

By H. LEPPER, M.R.C.V.S., Aylesbury.

I WAS much pleased by observing in the *Veterinarian* for June, a report of the poisoning properties of brine, when given to the pig.

As far back as the year 1816, which I may date as the earliest period of my acquaintance with the diseases of animals, up to the present time, I have occasionally witnessed the destruction of pigs by brine, which has been generally given to them as a portion of their food, and in total ignorance of its injurious effects. At the time alluded to, I resided in the lower part of Kent, and the disease thus produced was there called staggers, and, strange as it may appear, was very erroneously supposed by the common people to arise from a bone said to be situated in the palatine portion of the mouth, and which it was necessary to remove to relieve the animal. There were many empirics who professed to cure by removing a portion of bone so situated, and called the "stagger-bone." I have also known many healthy pigs undergo this operation as a preventive; these cases being in this respect analogous to the "worming" of puppies to prevent their doing mischief

in the event of their becoming rabid. Occasionally some of the animals did recover after the operation, and which they doubtless would have done if left alone, for I have found that many of these cases, particularly if the salt acts as an emetic, and is thereby ejected from the stomach, are spontaneously restored. The symptoms of the poisoning are rather peculiar, inasmuch as the animals show a great disposition to move in a backward direction; and, as the disease progresses, and they become enfeebled, they place themselves in a position similar to a dog when sitting on his haunches, and presently, by dropping still lower, they rest on the abdomen and sternum, with the fore legs extended forwards, and the hind ones under the body. The head also is unsteadily supported.

The post-mortem appearances which I have principally observed are, an inflamed state of the muscular and mucous coats of the stomach, especially at its greater curvature, and extending thence towards the pyloric orifice. The mucous coat is separated with tolerable ease from the muscular, and is occasionally extensively covered with vibices.

I have not unfrequently witnessed great losses from overdoses of salts in solution; and I remember, in the year 1835, being hastily summoned to a farm about two miles distant from my residence, to see some cases, when I found eleven fine hogs dead, and fourteen or fifteen more seriously ill. Most of the living ones had thrown from off their stomachs large quantities of food, &c.; and, with the exception of two, these all gradually recovered. They were not subjected to any treatment beyond being turned into a good pasture-field, the herbage of which they readily partook of as they got better.

The accident in this instance was traceable to the carelessness of a servant who had charge of the cooking of the food for the pigs, and which consisted principally of refuse rice and barley-meal. He had been directed to put a portion of salt into *each* boiling, but having allowed the food in the cistern to become so low that enough only remained to supply the animals with the evening meal, he put into this quantity sufficient salt for six or eight boilings.

I may remark, that pigs are not the only animals which suffer from a large dose of salt. On the 25th of October, 1840, I was requested to see a quantity of heifers, which were somewhat suddenly taken very ill. I found them staggering from side to side of the building in which they were placed, and in such a peculiar manner as to call forth from the attendant the remark, that they were all drunk. I suspected that they had taken some deleterious agent; and upon in-

quity (for the medical attendant is generally left in the dark in these matters), I ascertained that a pint of salt had been given to each of them in about two quarts of water. The dose acted freely on the bowels, and the only treatment necessary for their restoration was a free use of mucilaginous matters, by the employment of which, they all soon recovered.

Salt is often given to animals, and especially to pigs, in our large dairies, to assist in digestion, but almost invariably in such cases, there is a large supply of milk on hand, and the solution is, therefore, highly diluted. On conversing with a dairyman, a few days back, and making inquiries as to the quantity used, and if the animals ever sustained any injury from it, his reply was, No, but that it sometimes made them very drunk.

The last case of this kind that came under my observation was one of a very fine sow, the property of Richard Rose, esq., of this town. She was about four years old, and kept by him for the purpose of breeding; and ten days before the accident, she brought forth ten fine pigs. On the evening of the 18th of May, a quantity of brine was imprudently put with the wash with which she was fed. About eight o'clock on the following morning, I was summoned to see her as soon as possible, as she was said to be in a fit. I found her lying on the abdomen and sternum, having her fore legs extended forwards, and the hind legs placed in such a position as to force the trunk backwards. Her head was shaking, as in a case of palsy; the ears were cold and drooping; the mouth had a cadaverous appearance, and from it flowed a quantity of thick mucus. I recognised the case as one of poisoning by salt; at least the ordinary symptoms in those instances were present. On my stating this as my opinion, it was denied that she could possibly have had any salt given her, but I very soon traced out that a person, employed as a charwoman, had been directed to put away some stale brine, and that she had imprudently mixed this with the hogs' food. The post-mortem appearance of the stomach resembled that condition seen in the other cases of poisoning by salt which I have named.

CHRONIC NASAL GLEET PRODUCED BY A DISEASED TOOTH. OPERATION. CURE.

By J. HORSBURGH, M.R.C.V.S., Dalkeith.

ABOUT twelve months ago I was consulted by Mr. Herdman, farmer, Southside, respecting a mare, which had a considerable discharge from the near nostril. The account he gave me was, that she had been under treatment by Mr. G. Houston, V.S., Preston, for about eighteen months, and that he had often taken her to what he called head-quarters, viz., Professor Dick's, where the superior maxillary sinus had been opened with the trephine, something like a year since. The discharge, however, continued to flow, both from the nostril and wound.

On examination, I found that the defluxion had an offensive smell, and that the submaxillary gland was considerably enlarged, causing some suspicion of the existence of glanders. The opening into the sinus had apparently been made a little too high up, so that the central instead of the inferior part of the sinus was perforated. I proposed at once to open it lower down, but as my examination was made in the public street, on the market day, I thought it better to see the mare again, at her owner's residence, before fully deciding as to what was best to be done. On examining her at home, I found that the whole mischief was occasioned by a diseased tooth, and which, strange to say, had not been detected in the previous examinations. With the assistance of a smith I removed the tooth, which was split up its middle, and considerably decayed. It was more than two inches long, and was bent outwards towards the cheek. The odour emitted from the part was most offensive. I also opened the frontal and maxillary sinuses, both of which were filled with fetid pus. The wounds were first treated with a weak solution of chloride of lime, and subsequently with an ordinary astringent lotion. In addition to the local treatment, I administered the diniodide of copper.

After a considerable time the wounds were allowed to heal, and the mare appeared much better; but very shortly the discharge began again to flow from the nose worse than ever, the smell also was almost intolerable. Determined, if possible, to make a cure of the case, I cut into the sinus again with a skull saw, taking out a triangular piece of bone, about two inches long by one inch and a half broad. At the upper part of the cavity I found some masticated food in a state of

decomposition, and which had passed through the alveolus from which the tooth had been taken, into the sinus. A great number of small pieces of detached bone were likewise removed, and the opening being extended quite through into the nostril, a small instrument could be passed down it into the mouth. The smell was so bad, that two men assisting at the operation were obliged to leave. A weak nitric acid lotion was employed, to induce a fresh inflammatory action, and, if possible, to fill up by an effusion of lymph, the opening through which the masticated food was pressed upwards from the mouth into the cavity. The external wound was dressed with an ordinary healing lotion, and some tow was daily put into it, and pressed downwards to the mouth. A little blister liniment was also occasionally applied.

Before operating, the frontal sinus on the affected side was considerably more bulging, externally, than the other. It is now reduced. The wound is healed. The discharge from the nose is stopped, and there is no smell. Thus, after about two years and a half from the commencement of the treatment, this mare, which is now only five years old, is enabled to resume her daily work, and has every appearance of being likely to remain well.

Had I not been able to effect a cure by the closure of the opening into the mouth, I would have tried filling it with gutta percha. If a discharge were to take place again in this case, it would no doubt depend on the existence of a small aperture, and, under such circumstances, I should not hesitate again to cut into the sinus and endeavour to close the opening in the bone with gutta percha, or some similar substance.

INVERSION OF THE UTERUS OF A MARE.

By J. A. HUGHES, M.R.C.V.S, Leominster.

DEAR SIR,—I have sent you a short history of the case of inverted uterus, agreeably to your wish, that you might, if you should think fit, hand it to your colleagues for insertion in the *Veterinarian*.

March 27th, 1852.—At 2 a.m. my attendance was requested to see a bay cart-mare, four years old, in good condition, belonging to W. Newman, Esq., of this borough, at his farm about three miles distant.

His servant who came for me said that “when the foal came away, it (meaning the uterus) all came together.” He

also told me that a man had assisted the mare in foaling, and that the foal was dead. I inquired if any person was left in care of the animal to prevent her injuring the womb, when, much to my surprise, he informed me there was not. I, however, could not blame him for this oversight, as he was so much excited as not to take ordinary precautionary measures. After despatching the messenger with instructions to call up some men at the adjoining farm to assist in the necessary operation, I started to see my patient. When I arrived I found her standing in the loose box in which she had been placed. She was not straining; but the uterus was inverted to its fullest extent and lacerated very much. The hemorrhage also was very great from the parts. After administering a fair dose of the watery solution of opium, I had cold water continually applied to the uterus and vulva, when with the assistance of a young farmer, I commenced my manipulations with a view to replace the womb. Our hands were protected with cloths, as great care had to be taken that the organ was not further injured. By applying gentle pressure to the central part, while my assistant was compressing the sides of the organ, I ultimately succeeded in replacing it. This done, I kept my hand in the womb for some time and had the cold water externally applied. Within a short time the uterus began to contract, after which the hemorrhage was arrested. Finding also that the mare did not attempt to strain, the cold affusions were discontinued. She was afterwards clothed and made as comfortable as the circumstances would allow of. A person was also left in charge of her, with instructions to immediately report should any untoward event occur. Before leaving, a mild aperient was given. The pulse at this time was weak and numbered about 70; but the symptoms were favorable on the whole.

28th.—The pulse had sunk to 65; there was no straining, and only a slight discharge from the vagina. The bowels had been relieved. Ordered a dose of *Liq. Ammon. Acet.*

29th.—I did not see her to-day; but gave instructions for similar treatment to be continued. From this time she went on well, the bowels only requiring to be kept relaxed, with a view of checking febrile action. A muzzle was also used to prevent her eating the straw, as I only allowed her a mash diet. She was discharged from further attendance on the 5th of April, and continued to go on well.

RUPTURE OF THE VAGINA OF A MARE COMPLICATED WITH AN ESCAPE OF THE SMALL INTESTINES.

By BRAND GARNER, M.R.C.V.S., St. Ives.

MAY 16, 1856.—About 11 a.m. I was summoned to attend a mare, four years old, and in good condition, belonging to Mr. John James, at his farm near Hilton, five miles distant from St. Ives. The messenger's report was, that his master was from home, and the foreman wished me to come over as quickly as possible, as "the young chestnut mare" was about to foal; and as she had never had a foal before, if anything went wrong, he should not know what to do. He also said that symptoms of parturition had been observed but a very short time before the foreman sent for me. I lost no time in returning with the messenger; but when I arrived at the farm, the foreman, much to my surprise, met me in the yard, and told me that the mare was dead, and that she had not given birth to her foal. In answer to my inquiries as to whether he had tried to take away the fœtus, he said that there was not any part of it to be seen, and therefore he did not meddle with the mare. He added that he had never seen a mare in so much pain as this one, and also that he had never known so much of a mare's "*reed*" to come down before foaling. I told him I did not know what he meant by a mare's "*reed*," unless it was the placental membranes, and that these were not expelled until parturition was completed. On going into the place where the mare was, to see this "wonderful large reed," I walked behind her and lifted up her tail, when, to my surprise, I observed that some of the small intestines were hanging, in a mutilated state, from the vulva. On searching among the straw, I found other portions of the torn intestines scattered over the floor. The place, which was a studded and boarded one, was rather small for a mare to be in when about to foal, and I have no doubt that on the occurrence of the rupture and protrusion of the intestines, as she was quickly turning round, as mares are accustomed to do during parturition, the intestines were caught by a nail or splinter of wood and were thus both drawn out to a greater extent and likewise torn. It was evident also that they had reached to the ground, and it is more than probable received further injury by being trod upon by the mare herself.

Under these circumstances I determined to make a post-mortem examination, and at once opened the abdomen.

There was a large quantity of blood contained in this cavity, which had escaped from the torn mesenteric vessels. The viscera were otherwise healthy. On examining the vagina, I found a rupture in it about eight inches from the vulva, through which the small intestines were protruding. The intestines were separated from the mesentery, and, of course, all the vessels were rent asunder, thus accelerating the poor animal's death. The fœtus was placed in such a position as to prevent its natural delivery. One of its fore legs was lying over the neck, so that the head was turned on one side, whilst the foot of the other leg was placed against the rent in the vagina in such a manner that no doubt could be entertained that in the parturient pains it had penetrated through the walls of the passage. I learned that the mare had been cast about a fortnight previously, and that she had been kicked two or three times by the other horses when in the yard. She was not known to be unwell during her pregnancy, still I am unable to say whether her being cast had anything to do with the altered position of the fœtus.

CASE OF MORTIFICATION OF THE INTESTINES OF A DOG, CAUSED BY THE ANIMAL SWALLOWING A PEBBLE.

By the Same.

ON June 5th, 1856, a fine Newfoundland dog, two years old, and in good condition, the property of the Rev. Yates Fosbrook, of this place, was brought to my yard, being very ill.

I learned that the dog had not been well for nearly a week, and that during this time he appeared very dull, was mostly lying down, and very frequently sick, even if he took only a little water. Some aperient pills were given, but the bowels did not respond to their action.

The leading symptoms now present are, an anxious countenance; great dulness; disinclination to move; belly extremely hot and painful to the touch; eyes red; mouth clammy; nose hot and dry; legs and ears cold; breathing somewhat quickened, and the pulse rapid, but very weak. No excrement can be felt in the rectum.

Diagnosis.—Inflammation of the stomach and intestines, associated with obstinate constipation.

Prognosis.—Unfavorable. I ventured, however, on a small bloodletting, but found, as anticipated, that he could not bear the loss of blood. Afterwards I threw up an enema of castor oil, and applied a blister to the belly. The medicine which was given was presently ejected from the stomach, and no sedative agent which I tried during the day would allay the irritability of this organ. In the evening, there being no diminution in the severity of the symptoms, I re-blistered the abdomen, and gave a turpentine enema. Contrary to my expectation, he lived through the night, but died early the next day.

Post-mortem examination.—With the exception of the viscera of the abdomen, no disease was found. The stomach, throughout its whole inner surface, was intensely inflamed, but its peritoneal coat was not much affected. On turning the intestines on one side, I observed that, for about six inches of the length of the small ones, they were in a sphacelitic condition, and contained what I supposed might be a calculus, but which proved to be a pebble, about the size and shape of a bantam's egg. It weighed a little over two ounces, avoirdupois. The liver, spleen, and pancreas were congested, but otherwise healthy, as were also the urinary organs. This dog had been taught to run after stones when thrown to a distance, and to bring them back in his mouth; and we may readily suppose, that picking one up in a hurry, it slipped down his throat. The sphacelitic portion of the intestine with the stone in it very much resembled a drawing of a similar case which Professor Simonds used to refer to in his lectures during my pupilage, and which is published, with the illustration, in Professor Morton's work on 'Calculus Concretions.'

AN ANIDIAN MONSTER OCCURRING IN A SHEEP.

By the Same.

MARCH 3d, 1856, I was requested by Gilbert John Ansley, Esq., of this place, to examine a curiously-shaped lamb, which had been removed from a ewe after death. It was without either head or tail, which induced the shepherd to believe that its head would be found in the interior of its body. It measured about two feet in length and sixteen inches across its greatest part; and weighed nearly two stones and a half. It had rudimental legs, but which were not more than four inches long, and none of them had any toes or digits. Its general

appearance was not very unlike a small pillow with its four corners tied up. No anus, vulva, or scrotum, could be detected, but a small piece of wool, rather longer than the rest, existed in the place where you might expect to find an anal opening, and underneath this was a nude portion of skin which was connected with a groove that run downwards to separate apparently one thigh from the other. At the opposite end, where you would expect to find the neck, a small prominence only existed. The whole mass was soft, and felt very like what shepherds call a water-bellied lamb.

Some time before this ewe was expected to lamb, she was obliged to be lifted up, in consequence of the great size of the abdomen. At the time of parturition the shepherd took a natural-formed lamb from her, but it was dead; he also tried to remove this monstrosity, but without success, which led them to kill the ewe.

On cutting into the central part of the mass, a cavity was exposed, which contained a large quantity of serum, and within it were placed some imperfectly-formed intestines of very small calibre. The stomach also was but a rudimental organ. There was also present a considerable amount of glandular substance, similar in appearance to the pancreas of the horse, only much softer. There was no trace of either the kidneys, liver, or spleen, nor of the diaphragm, lungs, or heart; in fact, the cavity contained nothing beyond the intestines, stomach, and glandular substance, with the serous fluid. Six ribs, imperfectly formed, existed on either side, but I could not detect any sternum. In short, the mass appeared to be composed almost entirely of cellular tissue infiltrated with fluid.

The ewe was about four years old, and of the Leicester breed. She maintained herself in good condition almost up to the time of lambing. Last year she produced twin lambs, both of which were reared.

TETANIC CONVULSIONS, ENDING IN DEATH, IN A DOG.

By W. G. REEVE, M.R.C.V.S., London.

In the afternoon of Saturday, March 24th, I was requested to attend at the residence of the Rev. Mr. Rice, to see a bitch that had been suddenly taken ill. She had had pups about six weeks previously, and one of them had already been taken from her.

She had been taken about noon into the town by the butler, and was attacked in the street while following him. The man said, that hearing a noise he looked back, and perceived the dog had a difficulty in progressing; she was partly down, and was scratching the pavement with the hind feet in her endeavours to walk. She was at once brought home, and a messenger despatched for me.

Symptoms.—I found her lying upon the hearth-rug, each limb stretched out, divergent, quite stiff, but jerking and trembling. Every muscle, *except those of the mouth*, was affected with tetanic rigidity. Those of the legs were so stiff, that when I attempted to flex either the tarsal or carpal joints, I was quite unable to do so; and the rigidity also of the muscles of the sides and lower part of the neck quite prevented the dog's looking at the flanks, which she frequently tried to do. The breathing was greatly accelerated, loud, and panting. The action of the heart was bounding and quick, but the precise number of the pulse could not be determined, in consequence of the excessive panting character of the breathing, and the violent motion of the costal parietes of the chest. Consciousness was unimpaired, the dog being alive to every sound and motion, but exhibiting no nervousness, or start upon being approached, touched, or even moved. She seemed peculiarly sensible of sympathy and kindness, and appeared to suffer no kind of inconvenience from being lifted up. The case was further characterised by an intense thirst. The power of deglutition seemed unimpaired, for she drank frequently and copiously of cold water, with which I had her liberally supplied, and she was able to do this although the muscles of the body and neck were so rigid as to render it necessary that an assistant should raise her bodily up, like a stiff board, to dip her muzzle into the saucer.

Having seen dogs die from the effect of strychnia, I had no difficulty whatever in forming my *diagnosis*, for when the action of this drug has been once witnessed, it would be impossible not to recognize the symptoms in every subsequent case. My *prognosis* was, of course, unfavorable, especially as the symptoms continued to increase in severity.

Treatment.—Potassio Tart. Ant., gr. iij, to be given immediately, in a little water.

The effect of the emetic was almost instantaneous. With the exception, however, of a little frothy fluid, in which no particle of the drug could be seen, it brought but little off the stomach. I next ordered the dog to be put into a bath, as hot as she could bear it. She could not, however, be fully immersed, and was therefore held in a standing position upon her

stiffened extremities, the water covering the elbows, haunches, and abdomen. Judging, from indications, that the bath seemed to sooth the suffering, and was evidently agreeable to the patient, for although the panting was, as I expected, increased, the general restlessness was diminished, after about twenty minutes, I had the dog taken out, wiped, wrapped in a blanket, and laid before a large fire, the object being an endeavour to keep the patient in a kind of vapour bath.

At first, the only apparent good effect produced was a diminution of the restlessness; the tetanic and other symptoms remaining as before. After ordering a liberal supply of cold water to be given, the bath to be repeated in half an hour, and the patient to be kept hot during the interval, I left, with a view of sending my assistant to administer an aperient enema, and another emetic.

At 7, p.m., I again visited my patient, and was agreeably surprised to find a very marked improvement. The jerking had subsided, the respiration was almost tranquil, the thirst considerably less, all the joints flexible, and the dog evidently much easier; in fact, the tetanic symptoms were all but gone.

I administered a draught containing T. *Opii* \bar{c} . Sulp. *Æther.*, in a little water, and ordered my patient to be kept warm, and not to be disturbed if inclined to sleep.

23d. Sunday morning. Upon attending, I found the patient upstairs in the drawing-room, in company with its companion pet dog, and, to all appearance, convalescent. The pulse and respiration seemed natural, and the dog had partaken of broths, &c. Every symptom observed on the evening before had gone, leaving only that languor which might be expected after such violent muscular contractions. The owner was profuse in thanks, expressed himself satisfied that the dog would require no further attention, and so I took my leave, certainly thinking that my attendance was discontinued rather prematurely.

In the afternoon of the 24th I was, however, sent for again. Sickness had attacked the patient, the stomach seemed incapable of retaining food, the bowels were much relaxed, the evacuations were watery, the visible mucous membranes pale, and the thirst considerable. The pulse and respiration were, however, but little disturbed, the most prominent symptom being excessive and increasing weakness. In brief, in spite of every effort, the dog continued to get worse, and died during the night.

As it was not the wish of the owner, a post-mortem examination was not made. I therefore cannot give the morbid appearances; but I may add, that so satisfied was I, from

the symptoms, that strychnia or nux vomica had been the agent used at the commencement of the illness, that the evacuations were not tested.

I cannot but think that the second symptoms were, in a great measure, the effect of the antimony, as I feel fully persuaded the original poisoning had been successfully combated by the hot baths. This, however, is but an opinion. My object in laying the case before the readers of your Journal is simply to draw attention to the striking benefit the animal derived from the effect of the hot bath.

I may add, that with respect to the dose of strychnia that will poison, I have known the sixth part of a grain kill a good-sized spaniel dog; and further, that I have observed the muscles of the mouth and lips to be the *last* affected; and at times, as seen in the above case, not at all. Furthermore, I have observed in those cases in which dogs have died in tetanic convulsions, that the muscles were hard and rigid after death, but, in the case I have given, in which the dog recovered from the immediate effect of the poison, and afterwards sank from exhaustion, the muscles and limbs were flaccid and flexible after death.

ULCERATION AND SPHACELUS OF THE INTESTINES OF A MARE.

By G. EVANS, M.R.C.V.S., Bridgnorth.

THIS morning, May 31st, I was called to see an old cart-mare, said to have "belly-ache."

History.—This mare, although she never spared herself while at work, had been declining for a long time, and was often subject to "gripes," especially during the last winter, but she always recovered without the administration of medicine. About six weeks ago, being at æstrum, she was sent to the horse, but did not do so well afterwards. Yesterday she was put to hard work, and looked very unwell last night; she was, however, turned out to grass with the other horses, and this morning was found to be very unwell, suffering much abdominal pain. When I saw her, the leading symptoms were a staggering gait, and an inclination to prop herself up by leaning against the wall of the stable. At times she would get down and sit on her haunches. The extremities were cold; mucous membranes injected; and the pulse imperceptible to the feel,

except at the iliac artery, where it numbered 62. Rigors were also present, and from time to time she was attacked with most severe abdominal pain, accompanied with straining, more like that of parturition than anything else, and which was considerably increased after I passed my hand up the rectum, to examine that intestine. It was thus I felt the pulse at the iliac artery.

I pronounced the case at once to be hopeless, and within two hours of my seeing her she died.

Post-mortem examination.—The intestines were all more or less inflamed, while the ilium was in a state of sphacelus, being quite black on its inner, and green on its outer, side. The mortification extended some distance towards the large intestines. All the other organs were healthy.

I send you part of the small intestines, attached to which you will observe a tumour or sac, which I doubt not will be found to communicate with the interior of the intestine, as there was a similar condition of the ilium, but very much larger. Some feculent matter, having a peculiar yellow appearance, occupied the interior of the tumour, and the parts surrounding it were completely mortified. It was here that the enteritis seemed to have originated.

About six weeks ago I had a patient, a mare, 25 years old, which died, presenting similar symptoms, and in her case there were a great number of ulcerations in the small intestines, many of which had actually perforated the coats. In most of them a little opening only existed, but in two or three places the perforations were large enough to admit the end of the little finger. The contents of the intestines had escaped into the cavity of the abdomen, and produced fatal peritonitis. All of the ulcers were situated on the free margin of the intestines, and there was considerable induration of the gut around many of them.

[The intestine sent by Mr. Evans, consisted of a portion of the jejunum, the coats of which were much thickened from recent inflammatory action, as well as from chronic disease. The enlargement to which he alludes was placed on the attached margin of the tube, and had externally the appearance and feel of a suppurating tumour. On slitting up the intestine, an ulcer, nearly as large as a five shilling piece, was found to have penetrated both the mucous and muscular coats of the bowel, and to have extended a short distance between the layers of the peritoneum constituting the mesentery. Within the cavity thus produced, some softened alimentary matter had insinuated itself, causing the peculiarity

of feel to which we have alluded. The impaction of the ingesta was evidently very recent, but the ulcer had as clearly a long existence, and no doubt that the attacks of spasm in this case were in part due to its presence.]

PLEURO-PNEUMONIA IN LAMBS.

By J. D. PEECH, M.R.C.V.S., Wentworth.

AT the request of Mr. Mann, of Scawsby Hall, I recently made a post-mortem examination of a lamb which had died a day or two previous to my receiving it, from a disease which has all the appearance of an *epizootic*; indeed, there can be little doubt of the fact, as between 40 and 50 of the lambs in the same flock have died in a very short time.

The symptoms that were related to me by Mr. Mann are as follows:—A blue appearance about the nose, lips, and mouth, tongue studded with small spots of a red colour, mouth hot, breathing very much accelerated, quick and *short* in *character*, a great disposition for quietness and separation from the other sheep, and, if suddenly disturbed or moved, a painful cough would immediately come on, which was, however, more severe in some cases than others. Sometimes a pair of lambs, twins, would be affected, in other cases only one of a pair. The bowels are generally constipated.

The lamb submitted to examination, illustrated the disease in an advanced stage, it having been ill from five to six weeks. After removing the skin, the muscular tissue was observed to be very much wasted and pale in colour.

On opening the abdomen, the stomach and intestines were found to be healthy, and to contain a fair quantity of ingesta. The liver was congested, but the kidneys were free from disease.

On laying open the thorax the right lung was found to be one complete mass of disease. And on removing the sternum, a large abscess, situated in the antero-inferior mediastinum, was brought into view, which had evidently been existing for some time, as the contents were thick and grumous, and might be easily removed in masses with the scalpel.

The lung itself, the right one, was completely hepatized, and about the centre of its costal surface a portion of the organ, of an irregular shape, was of a very dark colour: at this part softening had commenced. The tissues were fast

breaking up; and another abscess would doubtless have been the consequence had the animal survived a little longer. In other parts of the substance of the lung a similar condition was observed, but not to so great an extent. Considerable adhesion had likewise taken place between the pleuræ pulmonalis and costalis, and more especially on their superior aspects.

The heart and large vessels were healthy, as was also the left lung.

The disease affecting these lambs is evidently pleuropneumonia; but there are important pathological differences between this malady in cattle and the one under consideration.

SYMPTOMATIC DISEASE OF THE BRAIN IN CATTLE.

By H. FLOWER, Jun., Derby.

THINKING that a short description of a disease affecting the cattle in our neighbourhood, in the months of May and June last, might possibly be interesting to your readers, I have ventured to send you a few of the particulars; and especially as I have recently had some fresh cases of the disease brought under my notice.

The first symptoms which are usually observed are dullness, loss of appetite, staring of the coat and, if the animal be a milking cow, a great diminution in the quantity of the milk. There is generally a cessation of the alvine evacuations, which is shortly succeeded by a death-like coldness of the extremities. The animal soon becomes comatose, and grinds its teeth incessantly. The respiration is at first tranquil, and the pulse slow but full. The patients will frequently be seized with a kind of epileptic fit, which lasts but for a few minutes, during which time some of them will exhibit the most violent symptoms, such as bellowing hideously, pawing the earth, and running at anything within their reach: they will also break out into profuse perspiration, and press their heads forcibly against the wall, even to such an extent as to break off their horns. Many are seized with violent tremblings and twitchings; and towards the latter period of the disease the respiration becomes extremely laborious, the jaws are firmly closed, convulsions succeed each other rapidly, and death shortly closes the scene.

We have attributed these effects to the animals having eaten of some poisonous herbage, but whether correctly so I cannot say.

The post-mortem examinations reveal large patches of intense inflammation of the papillated surface of the rumen and omasum, and likewise of the villous coat of the abomasum. In many places extensive ecchymoses also exist. The reticulum appears unaffected. There is considerable turgescence of the vessels of the brain, but with this exception every other organ is usually found healthy.

We have given trial to a variety of remedies, but with a very limited amount of success, most of the cases terminating fatally. I may just add, that the duration of the malady is various, some of the animals dying in the course of twenty-four or thirty-six hours, while others live several days.

ON THE EPIZOOTIC LATELY AFFECTING LAMBS.

By "A MEMBER OF THE VETERINARY PROFESSION."

I SAW in the *Veterinarian* some time ago, an article from the pen of Mr. Parsons, respecting an epizootic disease in lambs, which occurred the summer before last. I am sorry I have not been able to notice it before, for the purpose of saying that the affection proved very fatal in my part of the country. I heard that one farmer had lost nearly all his lambs, and that he remarked, he wished those which were alive had died, for they were so emaciated, that they would never pay for their keep. I have not had the opportunity to prescribe for any of the diseased animals, nor to attend a post-mortem examination; but a farmer, a friend of mine, who was fortunate not to lose many, told me he had had an excellent receipt given him by an old quack doctor, which he always used with the best of success. Here it is—oil of turpentine, salt, laudanum, and human urine, but in what proportions I do not know; the urine is, however, considered to be the "cure-all" of the mixture. A surgeon in the town has also informed me, that a person requested him to prescribe for some lambs affected with the epizootic, and he gave them Epsom salts and opium, with, as he said, very good effect.

CONGENITAL ATROPHY OF THE TESTES OF A HORSE.

By the Same.

I LATELY observed a horse at work in a team, which, by his appearance, I thought must be a stallion. I afterwards saw this animal turned out with the other horses, and as I knew there was a mare among them, and he did not interfere with any of them, I was anxious to make an examination of him. Meeting with the owner in the field, I remarked how like a stallion this horse appeared, when he informed me, that he had not been castrated, but from some cause or other he would not notice a mare. The horse being very quiet, I had no difficulty in examining the scrotum, when I found both testicles in their natural place: they were, however, deficient in size, and also very soft to the feel. He would allow me to handle them in any way I pleased, as they did not appear so sensitive as those organs are in their healthy state. One was about the size of a hen's egg, the other a little larger, but softer than the smaller one. I inquired if an attempt to castrate the horse had been made, or if he had ever received any injury in the parts, and was told that nothing had occurred to him, and that he was now in the same state that nature had formed him.

A CASE OF VIOLENT CATARRH IN A PIG.

By the Same.

I WAS called upon to see a pig belonging to a labouring man, who informed me that the animal had a great difficulty in breathing, and that he thought he would soon be choked. Upon seeing the patient, I concluded that it was suffering from violent inflammation of the membrane lining the nasal cavities, similar to an affection observed occasionally in the human subject. The animal had the greatest possible difficulty in respiring, and was obliged every now and then to gasp for breath to prevent being suffocated. I ordered a bold dose of salts and ginger to be given immediately, and for it to be repeated the next day if necessary. This presently effected relief, and in due time the pig recovered. I have been

among most kinds of domesticated animals, and taken as much notice of them as any one, during the last fourteen or fifteen years, but I never saw a case of this description to so great an extent before.

PARALYSIS IN A DRAUGHT MARE.

By the Same.

August, 1855.—A messenger called at my residence to request me to visit a mare belonging to a person living near at hand; but as I was from home, he left word that the animal had had an attack of colic, and was then very ill. I did not return until the next day, when I went to see the case. The subject of the attack was a cart-mare, in high condition, about nine or ten years old; she had had one or two foals in previous years, but was now barren. Upon examining her, I found she was suffering from paralysis. She had great difficulty in walking, rolling about from side to side, and sometimes tumbling down. The brain was not sensibly affected. The eyes were clear looking, and the iris acted to the stimulus of light. The sense of smell was likewise unaffected, as she could detect deleterious from good food. Her appetite also was not deranged.

This case originated spontaneously. The animal had been at work the day before, and was found in the state I have described when the man went to fetch her to go to work on the following morning. The patient being in a plethoric condition, combined with the suddenness of the attack, led me to conclude I had to deal with a case of effusion into the spinal canal; the treatment was therefore commenced by the use of a powerful counter-irritant to the poll and along the back, and the exhibition of a full dose of cathartic medicine, to which the bowels responded in due time. These measures were succeeded by occasional doses of calomel, or the iodide of sulphur. The treatment was pursued for about five or six weeks, with, however, but little benefit. From this time I heard no more of the case until May last, when I was informed that the mare was even then in the same state as when I left her. From what I have stated, it may be, I think, safely inferred, that the affection involved the motor nerves more than the sentient, and that it originated in the spinal cord.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 395.)

NOT having had occasion to revise the proof sheets of last month's article, some errors, but of no very great importance, crept into it. Speaking of pleuropneumonia it was "*Lessona*," and not "*Lepona*," I quoted. The case of laryngitis was observed by "*Ringuet*," and not "*Rinquet*."

In my comments on M. Lafosse's instance of dental tumours, I say that Lafosse looked on the case he published as "a foetal inclusion," but I should rather have said as an "aberration in development." He does not class them with the teeth formed in the ovary, &c., but rather with those instances where an extra limb or portion of an extremity is to be met with. It is an accidental excess of parts in an otherwise well-formed individual.

SUPPURATIVE PHLEBITIS OF THE JUGULAR VEIN.—Less fond of depletives than in most parts of the continent, and not so rash as formerly in the operation of bloodletting, cases of inflammation of the jugular, excessively common years back, and up to the present day abroad, are now comparatively rare amongst us. Notwithstanding we do occasionally see an obliterated vein, but it is very seldom a horse is lost with suppurative phlebitis. Hæmorrhage has, however, been observed, at times so very troublesome as to drive individuals to ligature of the vein, a case of which has been recorded by Mr. Taylor, of Nottingham, and many others in foreign journals.

M. Rey, in the *Journal de Médecine Vétérinaire* for June and July of last year, publishes a memoir with a long list of cases, advocating the extraction of the diseased vein as unattended with risk, and hence a most successful operation though somewhat difficult to perform. The portion of the article which merits our attention, and calls for some remarks, is an anatomical description, by M. St. Cyr, of the lesions observable in inflamed jugular veins.

M. St. Cyr first mentions the effusion of plastic lymph, and its coagulation, glueing all the parts around the vein, but not infiltrating the whole of the venous tunics. It is only the outer cellular coat that is involved; so that the middle elastic and contractile one, though itself modified and thickened in consequence of inflammatory action, is not glued to the surrounding fibro-cellular tissue, but is readily stripped from it. The middle coat acquires that firmness which prevents the collapse of the vein when the latter is emptied. The ecchymotic specks of the internal serous lining are not, says St. Cyr, cadaveric, but constitute a special anatomical character of inflammation of the serous membrane which is never vascularized.*

At the same time as the above lesions are forming, concentric layers of lymph are gradually deposited within the vein—such deposit is of slow progress, and, a long while after its commencement, the vein is generally still permeable to blood. The lymph is the decolorized liquor sanguinis of blood as it coagulates, and the coagulation occurs either in concentric layers, or the cylindrical layers are incomplete, and at the point of interruption is a groove or channel left; the latter appearance occurs when the first layer of coagulated blood does not extend all round the interior of the vein. Lastly, St. Cyr speaks of a discoid deposition of fibrin as the result of a plug completely closing the vein at the spot where active inflammation has set in. The blood above the seat of occlusion then coagulates progressively from the plug towards the nearest collateral branch, so as to acquire the appearance of superimposed solidified lymph discs.†

When the blood first clots in the vein it is only adherent by its inferior extremity, and is mostly loose and floating. It soon adheres completely. The discoloration of the clot extends not always from the centre to the periphery, but from the oldest portions. Where the layers are concentric and tubular, they lose their colour first in the centre, and then towards the circumference.

Inflammation may subside, and the whole of the lesions described disappear. Some authors say, that once the blood has clotted within the vein, the latter is never restored, whereas others believe that a vein absolutely impervious to blood,

* I presume St. Cyr here means, that it is never the seat of ramified redness.

† For the sake of rendering this clear, I would compare it to the filling the veins with flat pieces of lymph, like shillings, but capable of adhering to the parietes of the vein, and to each other.

may again become capable to transmit it. Rey asserts having seen such cases, but St. Cyr believes that the circulation is reestablished only when a stream of blood, however small, still finds its way through.

If inflammation runs higher, the obliteration is complete—the lymph adheres tightly to the vessel, contracts and draws together its parietes, till it is converted into a fibrous cord.

When circumstances are still further unfavorable, the inflamed vein is painful, prominent, and the wound made by the fleam is filled with soft granulations, and in its centre there exists a little aperture from which pus flows; pressure on the lower part of the vein enables you to squeeze matter out abundantly. On introducing a probe into the fistula, it readily penetrates the vein, so that the pus comes from the vein. This is the suppurative phlebitis.

What is the condition of the vein and its internal clot? Some persons believe the internal coat of the vein to be ulcerated—converted into a distinct pyogenic membrane. The clot has not been thought of. St. Cyr has very carefully studied this point, and in the veins he examined he found a yellowish layer of lymph, connected in the upper parts of the vein with a blood clot, which is generally free, and floating in the interior of the vessel. The lining of the vessel preserves its smoothness and usual polish—other portions of the lymph deposit are diffuent and soft. St. Cyr holds to the degeneration of this lymph, or decolorized clot into pus, or rather he speaks of the pus as a method of development of the clot, the latter possessing a certain vitality, and being in fact a blastema. D'Arboval, in his article on phlebitis, speaks of pus appearing in the centre of the clot, and not between the venous parietes and the clot. St. Cyr thus cannot claim originality in his observation, but deserves great praise for the manner he has availed himself of immense opportunities at his command to study the pathological anatomy of inflamed veins.

Lastly, St. Cyr tells us, that it is not always that the above process is observable. There may really occur ulceration of the wounded vein, an intra-venous granulating surface is formed, and constitutes a true suppurating wound. The ulceration always commences at the edges of the orifice of the injured vessel. Do these granulations spring from the internal lining of the vein, or from the layer of lymph next to it that is organized? asks St. Cyr. It is difficult to decide, is his answer, but he inclines to the adoption of the latter view.

My brother has most carefully studied several cases of suppurative phlebitis in man; and in numerous experiments that we undertook on pyæmia, I had occasion to induce it in animals.

I believe that the first drops of ichor that appear at the bleeding orifice, very rarely, if ever, proceed from the vein, but from the liquefaction or puriform degeneration of lymph around it. The active inflammatory action prevents adhesion, and the closure of the venous orifice; but the lips of the latter are, by simple approximation, closed to the passage of blood from within, or to the entrance of pus from without. The pus forces its way into the vein if the pin is not early removed, ulceration of the edges of the venous wound occurs, and hæmorrhage results. If injections into the vein of pus and of putrid matter be performed neatly and dexterously, it is excessively difficult to produce inflammation provided the vein injected, like the jugular of our domestic animals, be free to the passage onwards of the materials. In injecting the mesenteric veins pus is rarely thoroughly washed off, as gravitation favours its retention, and then the vein that must be tied inflames and suppurates, but the pus is then limited by blood-clots and adhesive inflammation around. The limiting by blood-clots is a secondary process, generally imperfect, that I never witnessed in the jugulars, but only where pus was retained by simple gravitation. Water colours in my brother's possession, that I made from specimens he dissected, prove how, even in phlebitis in man, a vein may be full of pus—coagulated blood lying in the pus instead of around it, and the attempted formation of plugs being abortive. These facts—the merit of the discovery of which entirely rests with my brother, Mr. Joseph Sampson Gamgee—I mention as illustrating the subject on which I am commenting, and bearing as they do on the method of death in suppurative phlebitis, in man or animals, by the development of secondary abscesses or purulent infection.

Suppurative inflammation of the jugulars, and death by pyæmia, may, according to my notion of the primary seat of suppuration, be generally prevented. The success in the treatment of phlebitis amongst judicious veterinarians in Great Britain proves this inference just and tenable.

Returning to M. Rey's memoir, we pass to the consideration of surgical means recommended for the treatment of phlebitis. There are five that he discusses: 1st, blistering; 2d, ligature; 3d, the actual cautery; 4th, free incisions into the inflamed vein; 5th, extraction of the vessel. It is to establish the preeminence of the latter that Rey

has published his essay, with a long list of complete histories of cases.

First. The blistering ointment, so useful in thrombus, is of no great utility in well-established phlebitis. Rey recommends it for the reduction of the swelling and engorgement.

Secondly. Ligature has been recommended and adopted, but it is only available in extreme cases, and its abuse should be guarded against. On a healthy horse it is unattended with danger. In phlebitis, complications render it sometimes prejudicial, but, if the inflamed vein were extirpated, success would more frequently attend such efforts. It is especially dangerous to tie the vein where it is diseased. Before extirpating the jugular, M. Rey has tied the facial vein with success. The happy result of a case operated upon by M. Leblanc is attributed by Rey to the recent nature of the injury and probable non-existence of ulceration. The numerous accidents after ligature are attributable to the diseased vein being left in contact with vital textures, its presence having excited violent inflammatory action and general infection.

Thirdly. Cauterization is sometimes followed by death, and other complications, that have led M. Rey to abandon its use.

Fourthly. Laying open the fistula and diseased vein; clearing out the clots, except the plug at the upper part, which prevents hemorrhage. Leblanc recommends it. Cases of death follow this procedure, and principally from the vein lying buried amidst sound tissues. M. Rey has used the actual cautery to the exposed portions of the former, which portions were, consequently, eliminated. Hemorrhages, pyæmia, &c., have led M. Rey and others to discard this method of treatment, if such it may be called.

Fifthly. The extirpation of the jugular vein—an operation which has been long known and loudly condemned—is spoken of in terms of the highest praise by M. Rey, as he declares it invariably successful in effecting a cure of the worst cases in from a fortnight to three weeks. It has been classed amongst the surgical monstrosities of the ancients. Solleysel passes over it in silence; Hurtrel D'Arboval condemns it, not, however, so absolutely as Delwart. The latter gentleman speaks of it as a difficult, painful, and dangerous operation.

Rossignol, in 1845, and Valtat, in 1848, respectively cite a most successful case; and, in 1854, Rey wrote on the extirpation of the jugular vein as the most certain and expeditious means of cure in phlebitis.

Rey has adopted two methods, the one of dissection with the knife, and complete extraction of a certain length of vein, or separation with the fingers of the middle from the external

coat, and thus performing only partial extirpation. In the first place, a long incision was made from the fistula, the whole length of the vein upwards, but the enormous wound resulting called for many sutures, and for a considerable time to heal. Rey modified it by making three incisions, the one at the spot of the fistula, the second at the bifurcation of the jugular, the other over the internal maxillary vein in the parotidean region. A long bistoury was then used to dissect round the vein and draw it out, but the operation is a long and difficult one, though the issue is very favorable, and cicatrization more rapid than in the former method; sometimes a cicatrix was formed in from fifteen to twenty days.

The anatomical study of the diseased veins, clearly referred to in the preceding pages, led M. Rey to adopt a second plan. The infiltration of the cellular coat with lymph, and the modified condition of the middle tunic, render these readily separable; this is an invariable occurrence. Toothed forceps, suture needles, with waxed thread and bistoury, are the instruments required. The three incisions, as above, are made. The internal maxillary is sometimes tied, but if obliterated is simply divided; the external masseter is also tied and divided; the occipital vein is only cut through, and never ligatured. Sometimes Rey performs a fourth incision just over the edge of the maxillary bone, to tie the external masseter at this point. The index finger is passed into each incision, and made to penetrate between the external and middle coat; and the cylindrical object constituting the diseased vein is easily detached. The process of detachment is generally performed before the ligatures are put on. The last stage of the operation is the extraction of the isolated portion of vein, and it is dissected away with the knife even below the seat of the fistula, and then cut across. From six to eight inches of the vessel are removed. A suture each for the upper wounds, and two for the lower one, are required. The horse is kept on low diet and turned round in his stall, so that he may not rub his neck. Great pain about the neck and irritative fever are observable the day after the operation, but all subsides in a very few hours, and in from fifteen to twenty days the animal is perfectly cured.

Professor Rey says that there are certain complications which may present themselves at the time of the operation: such as difficulty in getting at the vein, and accidental hemorrhage. M. Rey has never seen hemorrhage at the separation of the ligatures. There is no need of tying the vein below the seat of the fistula, as it is always obliterated in its course towards the heart.

M. Rey records the histories of fourteen cases, all operated upon from the 4th December, 1853, to the 29th June, 1855, that is to say, in eighteen months. Notwithstanding the large number of horses treated in the Lyons School this is a considerable per centage. Unfortunately, we cannot confront with it numbers to prove how rare it is with us, and what an exception death is under such circumstances, but we cannot be surprised when in the last clinical report there are 110 "*saignées de précaution*" mentioned, and when we know how frequently the plan is resorted to in inflammatory disorders. I have repeatedly admired M. Rey's dexterity as an operator, but I have sometimes questioned the necessity of the operation. If suppurative phlebitis was so frequent, and so fatal in its effects, and did not allow of the adoption of preventive and mild curative measures, then that operation would receive our approval which was sure and safe in its effects. When I first read Renault's monograph on traumatic gangrene, and first saw M. Bouley tie the jugular in a horse above and below the seat of the incision, plugging the immense wound with tow, I formed a decided opinion against the laying open a thrombus and clearing out the clots, or interfering with the vein at all. If M. Rey's procedure is so infallible, how is it there were two horses with phlebitis which died in the Lyons' School, according to the clinical report, during the session of 1854-55? I have done M. Rey full justice, by giving a description of his operations, and publishing his opinions almost in his own words, though necessarily I have much abridged his sentences. I do not reproduce his cases, space forbids me, and necessity does not require it, as he relates fourteen successful instances, but from the descriptions of the condition of each vein extracted, it is clear that several were not instances of suppurative but of adhesive phlebitis, and did not call for surgical interference—even admitting, for argument sake, that where pus existed in the vein it was imperative that the scalpel and index finger should do their work. Veins have been tied, and setons passed through them, even by English veterinarians, but it is found best to exhaust all other means long before touching the vein; and there are means at hand, whereby the per centage of deaths from the accidents that may ensue after bloodletting is reduced to the very minimum.

If a human surgeon tied a vein he would be blamed for the proceeding, on the score that the ligature would excite phlebitis, suppuration, and be the cause of death. In animals veins may be tied, though they should not be, as it is not called for except under the most extraordinary circumstances.

I have tied them repeatedly for experiment, and sometimes with untoward results.

It is instructive to learn how much and what can be done under the most adverse contingencies. M. Rey's methods of operating are very appropriate, should such active surgical interference ever be needed. But, to prevent is better than cure, and it is on that ground that I believe the ultimate good attending his labours extremely doubtful.

(To be continued.)

Facts and Observations.

A NEW ANTHELMINTIC

SANTONINE, the active principle of the southernwood, has lately excited the attention of the medical world as a remedy for intestinal worms. According to Dr. Bishop, this agent has been extensively employed in Italy for many years, and with very marked success. It is given in doses of a few grains, and generally in combination with sugar, but is said to be more active when blended with scammony. The same author also speaks of its value as an expeller of worms from the intestines of the dog, a circumstance of some importance to us as veterinary surgeons, when we consider how frequently this animal is affected with these entozoa, and how very many of his diseases are associated with their presence.

THE USE OF THE TINCTURE OF THE MURIATE OF IRON IN OPEN JOINTS.

MR. EDWARD COLEMAN DRAY, M.R.C.V.S., of Leeds, sends us the following cases, showing the advantage of employing the above agent in penetrating wounds of joints:—

CASE 1.—A hunter, which cost his owner 160 guineas, received an injury in the hunting-field on the near stifle joint, causing a wound and an escape of synovia. The horse, on being brought home, had the usual treatment employed to cleanse the wound, &c., after which he was placed in slings, and the Tr. Ferri Muriatici was frequently applied by

means of a small piece of lint to the part. The animal remained in the slings six or seven weeks, by which time the wound was cicatrized. He was afterwards turned to grass, and continued to go on well.

CASE 2.—A large carriage horse having fallen while being used by the coachman, sustained a severe injury on the near elbow-joint, which produced a penetrating wound into the articulation, and an escape of synovia. The animal was treated similarly to the first, and with an equally beneficial result. He is now doing carriage-work, and goes quite free from lameness.

Mr. Dray adds,—“I am a great advocate for slings in all cases where quietude is required, and have often witnessed the good effects resulting from their use. How some veterinary surgeons can succeed in carrying on their practice without them is to me astonishing.

“I am indebted to Mr. Hallen, late of the cavalry dépôt, at Canterbury, for some slings which are made upon a new and improved principle, and which I can strongly recommend to the profession.”

POISONING OF PIGS BY THE BULBS OF THE NARCISSUS POETICUS.

MR. MELLETT, M.R.C.V.S., Henley-on-Thames, informs us that on the 26th of June, he was requested to examine some pigs, about forty in number, at New Ham, the property of Mr. H. Sharp, in consequence of several of them being very unwell, and two having died that morning. He ascertained that on the preceding evening, the gardener had emptied some refuse matters into the yard of which the pigs partook greedily. On looking over a portion of the heap not yet removed from the garden, some bulbs of the white jonquil (*Narcissus poeticus*) were found, and on cutting one of these, it emitted a strong and pungent smell, analogous to the odour Mr. Mellett had detected on opening the stomachs of the dead pigs. Portions of other bulbs, with the leaves of the plant, were also present in the stomachs and intestines, which viscera were much inflamed. The leading symptoms exhibited by the animals, were much depression of the vital powers, accompanied with violent purging. The treatment consisted principally of the exhibition of aperient medicine, with a view of removing the offending matter.

Sixteen of the pigs died in a very short time, but the rest did well. The gardener was of opinion that not more than fifteen or sixteen of the roots were thrown into the yard, and if so, it is probable all that partook of them died.

[PROFESSOR LINDLEY, in his *FLORA MEDICA*, says, that “the bulbs of the *Narcissus Poeticus* have considerable energy as emetics. They are administered occasionally on the continent in doses of five to ten grains to produce nausea, and of thirty grains as an emetic. In the form of extract, this and other species have been regarded almost as a specific in cases of whooping-cough, in doses of two or three grains; but, although the extract appears sometimes to act with surprising rapidity, effecting a cure in five or six days, yet it frequently fails, and is thought to be less efficacious than belladonna. In doses of two to three drachms the extract is a deadly poison.” He adds that the common daffodil, another of the tribe, “has properties similar to those of the *Narcissus Poeticus*. The flowers are likewise said to be emetic.” All other authorities agree in ascribing poisonous properties to the *Narcissi*.]

TRISMUS IN TWO PIGS SUPPOSED TO BE CAUSED BY THE GIVING OF SOME BRINE.

MR. H. CORBY, M.R.C.V.S., Andover, writes—“On the 9th of May last, I was requested to examine and prescribe for two sows, said to be ill in consequence of having had a quantity of brine mixed with their food.

“I found both of them to be affected with *trismus*. One had aborted a few days before, and was much debilitated; the other had a litter of pigs by her side, and she appeared to be but little affected. The secretion of milk, however, was quite suspended.

“A blister was applied to the neck and throat of each animal, and the sow with the pigs recovered in a few days; but the other not doing so well as could be wished, was killed on the 10th. I did not see the post-mortem examination, so that a doubt must exist as to the precise nature and cause of the disease.”

SALE OF CATTLE AT THE PARIS AGRICULTURAL EXHIBITION.

THERE was a great demand for the Ayrshire cattle, which fetched very high prices, but the short-horns were the favorites. Mr. Ambler's "Grand Master" was sold for £250. Two animals bred by Mr. Jonas Webb and the property of M. de Trehonnais, were sold, even before the opening of the exhibition, for £360. Several others fetched prices ranging between £80 and £150, and we should think that the average of the sale of short-horns would come to about £60.

It is also stated that Mr. Townley refused an offer of £1000 for his bull "Master Butterfly" which obtained the first prize.
—*Agricultural Paper*.

RABID DEER.

IN a communication received from Mr. J. D. Peech, M.R.C.V.S., Wentworth, he states that the deer alluded to in the June number of the *Veterinarian*, and said to be rabid, were certainly not so. "I have seen," he says, "several medical men who visited the animals when the disease assumed its worst form, and from their account of the symptoms and the *post-mortem* appearances, I have every reason to believe that it was an epidemic caused mainly by want of sufficient food. Since the animals have been well supplied with good provender, and especially now that there is abundance of grass, the disease has nearly or quite disappeared, there having been only one or two cases, and those of a very trifling character, for several weeks past. Should you wish, I have no doubt that either Dr. Jackson or Mr. Wainwright, surgeon, would willingly send you the particulars of the symptoms and post-mortem appearances of the animals in question."

Extracts from British and Foreign Journals.

ON THE RUMINANT QUADRUPEDS AND THE ABORIGINAL CATTLE OF BRITAIN.

By PROFESSOR OWEN, F.R.S.

ROYAL INSTITUTION OF GREAT BRITAIN.

The speaker introduced the subject of the Ruminant order of quadrupeds, and the source of our domesticated species, by some general remarks upon the classification of the class *Mammalia*, and on the characters of the great natural group defined by Ray and Linnæus as the *Ungulata*, or hoofed mammalia.

These are divisible into two natural and parallel orders, having respectively the *Anoplotherium* and *Palæotherium* as their types; which genera, as far as geological researches have yet extended, were the first, or amongst the earliest, representatives of the *Ungulata* on this planet.

The brilliant researches of Baron Cuvier, the founder of paleontological science and the reconstructor of those primæval hoofed animals, from fragmentary fossil remains in the gypsum quarries at Montmartre, were alluded to.

Diagrams of the entire skeletons of the *Anoplotherium* and *Palæotherium* were referred to, in illustration of their dental and osteological peculiarities.

The *Anoplotherium*, with the typical dentition of

3—3	1—1	4—4	3—3
<i>incisors</i> —	<i>canines</i> —	<i>premolars</i> , —	<i>molars</i> —=44,
3—3	1—1	4—4	3—3

had all its teeth of the same length, and in a continuous unbroken series: this character is peculiar to Man in the existing creation. The *Palæotherium*, with the same dental formula as the *Anoplotherium*, had the canines longer than the other teeth, and developed into sharp-pointed weapons; necessitating a break in the dental series to receive their summits in closing the mouth.

The *Anoplotherium* had 19 vertebræ between the neck and sacrum, viz. 13 dorsal and 6 lumbar. The *Palæotherium* had 16 dorsal and 7 lumbar vertebræ.

The *Anoplotherium* had a femur with two trochanters, and the fore part of the ankle-bone, called “astragalus,” divided into two equal facets. Its hoofs formed a symmetrical pair on each foot. Cuvier has very justly inferred that its stomach must have been complex, and probably, in some respects,

like that of the camel or peccari. The Palæotherium had a femur with three trochanters, an astragalus with its fore part unequally divided, and hoofs, three in number, on each foot. It most probably had a simple stomach, like the tapir and rhinoceros, which, amongst existing animals, most nearly resemble that extinct primitive hoofed quadruped, with toes in uneven number.

Every species of ungulate mammal with an uneven number of hoofs or toes, that has been introduced into this planet since the eocene tertiary period, whether it have 1 hoof on each foot, as in the horse, 3 as in the rhinoceros, or 5 as in the elephant, resembles the Palæotherium in having more than 19 dorso-lumbar vertebræ, which vertebræ also differ in number in different genera; *e. g.*, 22 in the rhinoceros, 23 in the mastodon, 27 in the hyrax. The typical Pachyderm, with an odd number of hoofs, have also three trochanters on the femur, the fore-part of the astragalus unequally divided, and the pattern of the grinding surface of the molar teeth unsymmetrical, and usually crossed by oblique enamel-ridges. All the existing odd-toed or perissodactyle mammals have a simple stomach and a vast and complex cæcum; the horned species have either a single horn, or two odd horns, one behind the other on the middle line of the head, as *e. g.*, in the one-horned and two-horned rhinoceroses.

Every species of ungulate animal with hoofs in even number, whether 2 on each foot, as in the giraffe and camel, or 4 on each foot, as in the hippopotamus, resembles the Anoplotherium in having 19 dorso-lumbar vertebræ, neither more nor less; in having two trochanters on the femur, in having the fore-part of the astragalus equally divided, and in having the pattern of the grinding surface of the molar teeth more or less symmetrical. The horned species have the horns in one pair, or two pairs. All have the stomach more or less complex, and the cæcum small and simple. In the hog the gastric complexity is least displayed: but in the peccari the stomach has three compartments; and in the hippopotamus it is still more complex. But the most complex and peculiar form of stomach is that which enables the animal to "chew the cud," or submit the aliment to a second mastication, characteristic of the large group of even-hoofed *Ungulata*, called "*Ruminantia*."

These timid quadrupeds have many natural enemies; and if they had been compelled to submit each mouthful of grass to the full extent of mastication which its digestion requires, before it was swallowed, the grazing ruminant would

have been exposed a long time in the open prairie or savannah, before it had filled its stomach. Its chances of escaping a carnivorous enemy would have been in a like degree diminished. But by the peculiar structure of the ruminating stomach, the grass can be swallowed as quickly as it is cropped, and be stowed away in a large accessory receptacle, called the "rumen," or first cavity of the stomach; and this bag being filled, the ruminant can retreat to the covert, and lie down in a safe hiding-place to re-masticate its food at leisure.

The modifications of the dentition, œsophagus, and stomach, by which the digestion in the Ruminantia is carried out, were described and illustrated by diagrams.

The speaker next treated of the various kinds of horns and antlers: the manner of growth, shedding, renewal, and annual modifications of the deciduous horns, the peculiarities of the persistent horns, the mechanism of the cloven foot, and the provision for maintaining the hoofs in a healthy condition, were pointed out.

The following were the chief varieties of the ruminating stomach. In the small musk-deer (*Tragul*) there are three cavities, with a small intercommunication-canal between the second and last cavity; the "psalterium," or third cavity, in the normal ruminating stomach, being absent. This cavity is likewise absent in the camel-tribe, which have the cells of the second cavity greatly enlarged, and have also accessory groups of similar cells developed from the rumen, or first cavity. These cells can contain several gallons of water. The relation of this modification, and of the hump or humps on the back, to the peculiar geographical position of the camel-tribe was pointed out.

The modifications of the ruminating stomach; the discovery of rudimental teeth in the embryo *Ruminantia*, which teeth (upper incisors and canines) have been supposed to characterise the Pachyderms; the occurrence of another alleged pachydermal character, viz., the divided metacarpus and metatarsus, in the fœtus or young of all ruminants, and its persistence in the existing *Moschus aquaticus*, and in a fossil species of antelope; the absence of cotyledons in the chorion of the camel-tribe, with the retention of some incisors as well as canines in the upper jaw of that tribe; the ascertained amount of visceral and osteological conformity of the supposed circumscribed order *Ruminantia* with the other artiodactyle (even-toed) Ungulata; above all, the number of lost links in that interesting chain which have now been restored from the ruins of former habitable surfaces of the

earth—all these and other similar facts have concurred in establishing different views of the nature and value of the Ruminant order from those entertained by Cuvier, and the majority of systematic naturalists up to 1840. Thus instead of viewing the *Anoplotherium* as a pachyderm, the speaker, having regard to the small size of its upper incisors and canines, to the retention of the individuality of its two chief metacarpal and metatarsal bones, and to the non-development of horns at any period of life, would regard it rather as resembling an overgrown embryo-ruminant—of a ruminant in which growth had proceeded with arrest of development. The ordinal characters of the *Anoplotherium* are those of the *Artiodactyla*. On the other hand, instead of viewing the horse as being next of kin to the camel, or as making the transition from the Pachyderms to the Ruminants, the speaker had been led, by its third trochanter, its astragalus, its simple stomach and enormous sacculated cæcum, the palæotherian type of the grinding surface of the molars, and the excessive number of the dorso-lumbar vertebræ, to the conviction of the essential affinities of the *Equidæ* with other perissodactyles (odd-toed hoofed beasts).

The primitive types of both odd-toed and even-toed Ungulates occur in the eocene tertiary deposits: the earliest forms of the ruminant modification of the *Artiodactyla* appear in the miocene strata. The fossil remains of the aboriginal cattle of Britain have been found in the newer pliocene strata, in drift-gravels, in brick-earth deposits, and in bone-caves. Two of these ancient cattle (*Bovidæ*) were of gigantic size, with immense horns; one was a true bison (*Bison priscus*), the other a true ox (*Bos primigenius*); contemporary with these were a smaller species of short-horned ox (*Bos longifrons*), and a buffalo, apparently identical in species with the Arctic musk-buffalo (*Bubalus*, or *Ovibos, moschatus*).

The small ox (*Bos longifrons*) is that which the aboriginal natives of Britain would be most likely to succeed in taming. They possessed domesticated cattle (*pecora*) when Cæsar invaded Britain. The cattle of the mountain fastnesses to which the Celtic population retreated before the Romans, viz., the Welsh “runt” and Highland “kyloe,” most resemble in size and cranial characters the pleistocene *Bos longifrons*. Prof. Owen therefore regards the *Bos longifrons*, and not the gigantic *Bos primigenius*, as the source of part of our domestic cattle.

From the analogy of colonists of the present day he proceeded to argue that the Romans would import their own tamed cattle to their colonial settlements in Britain. The

domesticated cattle of the Romans, Greeks, and Egyptians, bore the nearest affinity to the Brahminy variety of cattle in India. As the domestic cattle imported by the Spaniards into South America have, in many localities, reverted to a wild state, so the speaker believed that the half-wild races of white cattle in Chillingham Park, and a few other preserves in Britain, were descended from introduced domesticated cattle. The size of the dewlap, and an occasional rudiment of the hump in these white cattle, as well as the approximation to the light grey colour characteristic of the Brahminy race, seemed to point to their primitive oriental source. But the speaker could not regard the pure white colour as natural to a primitive wild stock of oxen. It is now maintained by destruction of all piebald calves that are produced by the so-preserved half-wild breeds.

If the blood of any of the aboriginal cattle, contemporary with the mammoth and hairy rhinoceros, still flowed in the veins of any of our domesticated races, he thought it would be that of the *Bos longifrons* transmitted through the short-horned or hornless varieties of the oxen of the mountains of Wales and Scotland.

In conclusion the speaker referred to the subjoined table of the classification of recent and extinct hoofed quadrupeds, as indicative of the progressive extinction of those forms of *Ungulata* least likely to be of use to man, and of the substitution of the ruminant forms, which, from the perfect digestion of their food, elaborate from it the most sapid and nutritious kinds of flesh.

UNGULATA.

<i>Typica.</i>		<i>Aberrantia.</i>	
ARTIODACTYLA*	PERISSODACTYLA.†	TOXODONTIA.	SIRENIA.
Anoplotherium.	Palæotherium.	Toxodon.	<i>Manatus.</i>
Chalicotherium.	Paloplotherium.	Nesodon.	<i>Halicore.</i>
Dichobune.	Lophiodon.		<i>Rytina.</i>
Cainotherium.	Coryphodon.	PROBOSCIDA.	<i>Halitherium.</i>
Poebrotherium.	<i>Tapirus.</i> ‡	<i>Elephas.</i>	<i>Prorastomus.</i>
Xiphodon.	Macrauchenia.	Mastodon.	
<i>Moschus.</i> ‡	Hippotherium.	Dinotherium.	
<i>Antelope.</i>	<i>Equus.</i>		
<i>Ovis.</i>	<i>Elasmotherium.</i>		
<i>Bos.</i>	<i>Hyrax.</i>		
<i>Cervus.</i>	<i>Rhinoceros.</i> "		
<i>Camelopardalis.</i>	<i>Acerotherium.</i>		

* ἄρτιος, *par*; δάκτυλος, *digitus*.

† Περισοδάκτυλος, *qui digitos habet impares numero*.

‡ Only those genera printed in *italics* now exist.

*Typica*ARTIODACTYLA (*continued*).*Camelus.**Auchenia.**Merycotherium**Merycopotamus.**Hippopotamus.**Dichodon.**Hyracotherium.**Hyopotamus.**Anthracotherium.**Hippohyus.**Chæropotamus.**Dicotyles.**Phacochærus.**Sus.**—Magazine of Natural History.*

CLINICAL LECTURE ON A VESICULAR DISEASE CONTRACTED FROM SHEEP.

By GEORGE BURROWS, M.D., F.R.S.

I think, gentlemen, you are well aware that whenever an opportunity offers, I prefer taking for a clinical lecture a series of cases which will illustrate some particular disease. This is my object generally, by preference; but when such a series of cases does not present itself in the wards, then I endeavour to select some case of great rarity, or of great severity, the study of which may possibly enlarge your knowledge of disease in general. It will be to a case of this latter description that I shall particularly invite your attention this morning

There is, as you know, a large and very important class of diseases depending upon the introduction of an animal poison into the system; and one striking feature of all such diseases is the appearance of an eruption upon the skin, accompanied with a peculiar kind of constitutional disturbance or distress. The animal poisons which are capable of producing such diseases are various; and these poisons are sometimes generated by human beings, and sometimes by the lower animals. The modes by which the animal poison may be introduced into the human system are also various. It may be introduced artificially or accidentally, sometimes into the blood-vessels, and sometimes into the tissue of an animal; and the same poison may be introduced by the process of inoculation. I say the poison may be introduced in various ways: it may be in a direct manner, the poison being taken from one animal,

and introduced either into the blood-vessels or into the tissue of another animal, by a process which we call *inoculation*; and at other times it would seem that the poison is merely conveyed from the surface of the diseased animal to that of the healthy person by contact—what we commonly call *contagion*. Or this animal poison may be of a volatile nature; it may be susceptible of solution or suspension in the atmosphere, and may emanate from the sick either by the breath, or by cutaneous exhalation; or by effluvia from alvine and other secretions: and thus it may effect those who come within certain range either of the sick man or diseased animal.

All these diseases arising from animal poisons, and propagated either through inoculation, or contagion, or infection, appear to be subject to certain general laws; and to these, perhaps, I may as well advert before I bring under your notice a very remarkable case of disease resulting from the introduction of an animal poison by means of inoculation. The poison in the case to which I allude was derived from the skin or from the other parts of the sheep's head, and introduced into the system by means of a butcher's knife. The general laws to which I have just alluded as governing those diseases dependent upon animal poisons, are more especially applicable, of course, to those poisons which are generated within the human body; although if we had greater knowledge of the diseases which result from poisons generated within the bodies of brutes, the same or analogous laws would probably be found to hold good also in them.

First, then, with respect to these laws relating to animal poisons, we observe that each peculiar poison has the power of exciting certain definite and specific actions when introduced into a healthy organization. And secondly, there appears to be a period of latency, a period of incubation in the system (varying in different poisons,) before the specific morbid actions are set up in the healthy system into which the poison has been introduced. And, thirdly, we observe that the specific morbid effects resulting from the introduction of the animal poison vary somewhat in different individuals, apparently varying according to the intensity of the poison—the dose of the poison, I may term it, imbibed, and the predisposition of the individual infected. Now, these laws to which I have thus adverted are particularly exemplified in cases of variola and rubeola, scarlatina, and typhus, according as these diseases occur sporadically or in the course of epidemics. Each of these animal poisons is productive of certain definite local morbid actions, which are not accidental but governed by certain laws. Some of these poisons, we

observe, excite a specific morbid action upon one membrane or organ, or upon one system of organs; others appear to excite specific morbid actions upon two membranes or organs, and others, perhaps, upon three. Now, these observations more especially refer to those animal poisons which are generated by human beings, and which are capable of being transmitted into the system of other human beings who are previously in a state of health. But the animal poisons which are generated by brutes, and which may be introduced into the system, and are capable of producing particular diseases—these are probably governed by analogous laws. For example, in that disease of this class with which we are most familiar, namely, vaccinia, or cow-pox—the disease which is introduced into the human system from the cow—these laws to which I have adverted are most evident; again, in that disease which is contracted by man from the horse, the glanders, a certain train of specific morbid actions is observed; and, also, in that more rare disease to which butchers are subject when they wound themselves in slaughtering oxen in a diseased state; and in the disease sometimes called malignant pustule, certain definite morbid actions also ensue.

Now, after these preliminary observations, I am about to describe a peculiar disease, which I believe to be derived from the sheep,—a disease, as far as I know, not hitherto described or adverted to by systematic writers. I have myself only seen two examples of this disease: they both occurred in young butchers, who had wounded themselves while cutting up sheep's heads, or dressing them for sale. The disease consists essentially of an abundant eruption of successive crops of vesicles and bullæ, of various sizes. These vesicles and bullæ are in some parts isolated from each other, and in other parts more numerous, and congregated together,—what we call confluent. These vesicles and bullæ appear principally upon the finer and more delicate portions of the skin and body, about the cheeks, the lips, beneath the chin, on the throat, the breast, upon the upper and lower extremities. These vesicles, or bullæ, however, are not confined simply to the cutaneous surface; they are found also upon the conjunctiva, upon the mucous membrane covering the tongue, the membrane lining the lips, upon a soft palate, and, perhaps, also, similar vesicles might be found on the lining membrane of the nostrils and of the pharynx. During the continuance of the disease, a discharge of mucus exudes from these parts, the nostrils and pharynx. The external appearance of this eruption generally resembles that of acute pemphigus, but not altogether; for we observe, that in some

parts this vesicular eruption more closely resembles the aggravated form of herpes, the vesicles being small and congregated together, with inflamed margins. In other parts, the vesicles are larger, and isolated, the eruption more closely resembling pemphigus; in other parts, the surface appears blistered, as by the action of boiling water. The whole of the cuticle of a certain portion, one of the extremities (for example), is raised in continuous blisters, running into one another, as if the surface had been irritated by the action of boiling water.

This is the general character of the eruption of the peculiar disease in question. Now, I will proceed to detail the symptoms of the particular case to which I have adverted.

On the 8th of April, there was admitted into Matthew ward, a young man named Charles Handsdale. The following is the account which he gave of himself:

“He is a single man, in good circumstances, of healthy parents, living at Barnet. He states that five weeks ago, while cutting a fresh sheep’s head, the knife slipped and cut his left thumb. He remembers the sheep’s lung was full of ‘white knobs;’ but he remained perfectly well (with the exception of the thumb being incised, and subsequently discharging), till Saturday, April 5th, without any symptoms of fever. He then noticed a spot upon his lip, which he states was like a scald; then a discharge from the eyes came on, but no headache and no shivering; and these spots gradually increased about his face and hands, till the disease had the appearance that it presented on admission.” On April 8th, when admitted, his condition was as follows:

“On his face, more especially about the chin, was a crop of small bullæ about the size of split peas. There were also similar spots on the mucous lining of the lip, as well as on the edge of the tongue, and on the soft palate and uvula. There was also a purulent discharge from the left eyelids. On the back of the hands there were some red elevated spots commencing to be papular. There were also about his abdomen and back, and the upper part of his thighs, many red elevated spots.”

When I saw him on the following morning, his expression was anxious; face flushed; eyes suffused; accompanied with a purulent discharge from the inner canthus of the left eye and the outer canthus of the right. There was also a purulent discharge from the right nostril. Lips dry. About his face, below the chin, there was an abundant crop of bullæ, which to-day seem to be of a more pustular character. They are also increased in size, some being larger than a fourpenny-

piece. Around each of the bullæ the cutis seemed inflamed. A few were now observed on the hairy scalp. The eruption was seen about the hands, around the wrists, extending up the inner aspect of the forearms. A similar eruption was also detected in each iliac region, the inner aspect of the thighs, upon the scrotum, upon the penis, and upon the back of the trunk; also upon each foot, about the ankle, and along the tarsus. Some of these bullæ were very minute, and others larger, about the size of split peas. As I have already said, the eruption was confined to the finer parts of the skin; in those parts where the cuticle was thickened,—on the outer aspect of the arm and thigh, the palms of the hands and soles of the feet,—this vesicular eruption was absent. The wound in the thumb was open, and discharging. The constitutional disturbance was much less than might have been expected to accompany such an extensive eruption. He was evidently a youth of great courage, and made light of his pains. His breathing was easy. There was slight cough and sore throat. Skin hot and dry. Tongue coated on the dorsum with a thickish white fur, the edges presenting an appearance of having small pimples upon them. Has a tolerable appetite; is not sick; no headache, and no thirst; bowels not open; urine free.

Now, I shall not pursue this case day by day, through its progress, but I will read you the note of the day after his admission, and then I will tell you generally the progress of the case for the ensuing fortnight. We found on the following morning that he had slept but little in consequence of the discharge from the eyes, which had been constant all night. His expression was anxious. He was lying on his back, with his mouth open. Lips and teeth dry. On the internal lining of the lower lip we observed a number of these minute vesicles, and some were to be seen on the soft palate, which had the appearance of being covered with patches of slough. About his face there were numerous bullæ, especially below the chin, and these had now begun to desiccate. About the upper extremities—on the inner aspect where the skin was soft—there was an appearance of these bullæ and vesicles, they were so numerous and congregated so closely together as to have become completely confluent. You could have fancied that the skin had been scalded with boiling water. About the thorax, also, the spots were more numerous, some of them containing fluid, which on the previous day they did not contain. They were more numerous about the trunk, about the axillæ and back, and in the iliac regions, the groins, the inner aspect of the thigh, and over the scrotum. Some of

them were ruptured, and a copious discharge was taking place from the surfaces. The eruption was more abundant also over the lower extremities, ankle-joints, and over the footsteps. The constitutional disturbance was greater than on the previous day. He had a very restless night, having been kept awake by the discharge from the eyes, and a soreness over the surface of the body. The pulse was accelerated (108), small and sharp, but compressible. The dorsum of the tongue was still covered with fur. His appetite began to fail. He stated that he was very thirsty, but had no headache. The bowels were opened once in the morning, the motion being confined. Urine free. He complained of some sore throat. There was slight cough and scanty mucous expectoration.

Such was the condition on the second day. The disease was obviously a very peculiar one, such as is not usually presented to our notice in this hospital, or, I believe, elsewhere. The moment I saw this young man I recognised a disease which had been under my notice about two years ago. In the month of March, 1854, a young man named George Richardson, about the same age as this patient, was admitted into John ward, and he presented over the surface of his body an eruption of a precisely similar character to the one I have just described. I learned, on inquiring into his history, that he was employed as a shopman at a butcher's, and had been engaged in skinning, cutting up, and dressing sheep's-heads for sale, and that he had wounded himself. An eruption succeeded, and he came into the hospital at a more advanced stage of the disease, remaining there about a fortnight. He gradually sank, and died, worn out by the continual irritation, and the copious discharge from the surface. The body was not examined.

Dr. Burrows, after describing the details of the treatment in the first-named case, concludes his lecture by observing, that "this disorder, as I have told you, is an undescribed disorder. In its general characters it very much resembles acute pemphigus, but it differs apparently from it in the circumstance that we have vesicles mixed with bullæ. It is not either the one or the other, but the two are combined in the same case. It further seems to differ from pemphigus, inasmuch as the mucous membranes of the eye, the nostrils, the mouth, the tongue, the pharynx, all are implicated at the same time. This is the case which I have thought it worth while to bring under your notice to-day, because it gives me an opportunity of making these remarks upon the peculiar characteristics of diseases caused by the introduction of animal poisons."—*Medical Times and Gazette*.

EPIDEMIOLOGICAL SOCIETY.

SUGGESTIONS FOR OBSERVATIONS ON THE NATURAL INFLUENCE OF CHOLERA ON THE LOWER ANIMALS.

By W. LANDER LINDSAY, M.D., Perth.

Dr. Lindsay considers, that for the successful prosecution of the study of cholera as affecting the lower animals as well as man, two classes of observers are necessary; for it seldom happens, nay it is scarcely probable, that the same mind is equally fitted on the one hand accurately to observe and laboriously accumulate facts, and, on the other, to sift, arrange, and reason upon these, so as to deduce general principles. No; he who gathers in the harvest of facts into the store-houses of knowledge, is the type of one class of naturalists—the careful, plodding, unostentatious observer; he may be said to be actuated by a spirit of acquisitiveness; while he who subjects the grain thus accumulated to the machinery of mental and scientific analysis, who separates the wheat from the chaff, who, from a chaos of apparently unconnected data, evolves harmonious laws, and exhibits their natural relations and significations, is the type of an opposite class, whose labours are guided by the spirit of inductive philosophy. *Dr. Lindsay* said, that from observations and experiments made in various parts of Central Europe, and, to a less extent, in India and Britain, it would appear, that coincident in date with cholera epidemics in man, there have frequently appeared cholera epizootics among the inferior animals, especially among the domesticated animals; that this cholera in animals resembles that of man, in its symptomatology and pathology; and that it is communicable not only between different individuals, but between different species and genera, and also to and from man. The Faculty of Medicine at Vienna reported, after the cholera epidemic of 1832, that while in Lower Austria, Galicia, Moravia, and Bohemia, no animals were exempt from the influence of that epidemic, the disease most closely resembled the human cholera in animals having similar structure and habits to man, such as the dog. The chief animals in which cholera has been noted to have occurred in Europe are horses, cattle, dogs, cats, and poultry—or, in other words, the domesticated animals—while in India and other foreign countries, in addition, racoons, camels, zebras, and monkeys have been mentioned. Some facts that have been recorded would lead to the inference, that the

cholera poison is deleterious to plants, as well as to the lower animals and to man; but the whole subject is one that still remains open to rigorous investigation, including minute chemical, histological, and microscopical examination. Dr. Lindsay concludes by propounding a very elaborate system of investigation, by veterinary surgeons, grooms, horse-breakers, poultry-men, and others, as well as by the medical profession; and, from the mass of facts accumulated by numbers of observers, it may be hoped such general principles may be established as shall throw some light upon the nature of this mysterious scourge.

Dr. Snow thought there was no ground for believing that the cholera attacked the lower animals and plants. The grape disease was caused by a certain fungus, and the diseases of wheat arose from insects having no connexion with cholera. The nature of the potato disease was unknown. The disease was not recognised till 1846, sixteen years after the first epidemic of cholera, two years after the second, and seven years before the third. The author stated, that cholera epidemics were coincident with a heavy and moist state of the atmosphere; but in the autumn of 1849, and also in 1854, when there was the greatest mortality, the air was drier than usual. He (*Dr. Snow*) was disappointed that the author had not adduced more facts. His impression was, that there was no fatal disease prevalent among animals contemporaneously with cholera epidemics.

Dr. Weber said, that in 1849 he mixed the contents of the intestines of a cholera patient with some food which he gave to five dogs and six cats. One of the dogs only (about five days old) died; and there were no symptoms referable to cholera.

Dr. Greenhow agreed with *Dr. Snow* in thinking that cholera did not affect the lower animals.

Dr. McWilliam observed, that *Dr. Lindsay's* excellent paper was suggestive, rather than didactic, to labourers in this interesting field of investigation. The cleverest account he had seen of a cholera epizooty being coincident with a cholera epidemic in man, was that recorded by the Faculty of Medicine at Vienna, which had been alluded to by *Dr. Lindsay*. It had been said that the lower animals became affected when other epidemics were prevailing among men. For instance, it was asserted, that because horses, donkeys, and goats, died in great numbers in the Cape de Verds, during the prevalence of yellow fever at Boa Vista, there was some connexion between the epizooty and the epidemy. This, however, was not the case; for the mortality among the lower animals was

very clearly attributable to exhaustion from want of food, consequent upon the drying up of the grass at the end of the dry season, and also, in some degree, to overfeeding in this state of exhaustion, when vegetation sprang up with the return of the rainy season, occurrences usual every year in this arid region. Great distress prevails at this moment in the Cape de Verds from famine; and for the last two years the loss of cattle has been high, beyond all precedent. Dr. McWilliam added, that there had been no chance of invoking yellow fever to explain these late epizootics, for, since 1846, no such disease had prevailed at Boa Vista, or any other of the Cape de Verd Islands; and that it was a circumstance worthy of note, that no "Eclair" had visited any island of the group since that time.

Dr. Webster and *Dr. Chowne* considered that, had cholera existed among animals, the fact could not have been overlooked by the numerous observers who had given the subject their attention, but would have been long since clearly established.

The *Chairman* said, that his own experience had led him to the same conclusion. He had made special inquiries on the subject in Jamaica, and could not ascertain that the lower animals had been affected by the cholera epidemic, though they had been greatly affected by the epidemic of influenza.

The Society then adjourned.—*Med. Times and Gazette.*

TOXICOLOGICAL AND PHARMO-DYNAMIC STUDIES ON VERATRINE.

By Dr. VAN PRAAG.

THE author has studied the action of veratrine on vertebrate animals, principally on mammifera, but likewise on birds, reptiles, and fishes. He has carefully analysed the symptoms produced, so as to ascertain the action of this medicament on the different systems or organic apparatus. Then recapitulating his observations, he deduces from them general propositions on the physiological action of veratrine, which he finds to be in many respects analogous to that of delphinine.

The author formulises the properties of this substance as follows:—

The respiration and circulation become less active. The muscles lose their tension. The irritability of many of the nerves, especially the peripheric cutaneous nerves, is much

diminished. Very small doses suffice to produce vomiting, and often diarrhœa. Diarrhœa, however, is more frequently produced by only large doses. The secretion of saliva is sensibly augmented. This collection of symptoms is ordinarily preceded by a certain excitation. The stage of excitation is characterised by accelerated respiration, rapid pulse, spasmodic muscular tension, and great nervous excitability. Death appears to result from paralysis of the spinal marrow.

The author has likewise instituted some experiments on man, and he finds that the action is similar to that on animals.

In using this substance we must always remember its lowering action on the respiration and circulation, and likewise its property of diminishing the muscular irritability. It ought, consequently, to be efficacious in febrile affections accompanied by tension of the muscles, for example, in typhus with etherism, in rheumatic fever, scarlatina, traumatic fever, strangulated hernia, and acute peritonitis, on condition that the body is not rendered too weak from other causes. It might also, from its action on the pulse and respiration, be useful in cases of pneumonia, pleurisy, and clearly inflammatory diseases of the heart.

The author concludes his work by passing in review the complaints in which veratrine has been employed.—*Journal de Pharmacie et de Chimie.*

THE SMITHFIELD MARKET SITE.

ON Wednesday morning was issued the report of the committee appointed to inquire into the appropriation of the site of Smithfield, and the establishment of a new Metropolitan Meat-market. The committee are of opinion that the best appropriation for the general benefit of so much of the site of Smithfield as reverts to the Crown, would be "to adapt it for the enjoyment and recreation of the public." They are also of opinion that a new metropolitan market for the sale of meat should be established in a central position. The committee do not believe that a well-regulated meat market would be detrimental to the general health of the surrounding neighbourhood. On the contrary, subject to regulations for securing cleanliness and order, they think that a spacious market would be a desirable substitute for the crowded streets and squalid buildings, the site of which it would probably occupy.

THE VETERINARIAN, AUGUST 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

ANNUAL MEETING OF THE ROYAL AGRICULTURAL SOCIETY
OF ENGLAND.

THE Royal Agricultural Society has just brought to a successful issue another of its annual meetings.

This year the honour was reserved for the county of Essex to receive the Society, as the representative of the home district, and Chelmsford was the town chosen as the place of gathering. It is somewhat singular that a county so entirely agricultural as Essex is, and which stands second to none in practical farming and can boast also of its Hobbsses and Mechis, among the scientific cultivators of its soil, should so long have remained without a visit from the Society. With the causes of this delay we have not to do, for professedly *purely* agricultural matters interest us less than those relating to our own profession.

We, however, are of opinion that our pages are rightly and profitably occupied by a discussion of the principles of Agriculture, and especially in their bearing upon the breeding and rearing of domesticated animals, for we believe agricultural science to be so intimately inwrought and blended with veterinary medicine that either must flourish or decline as the other rises or falls. Beside this agriculture is to be regarded as the parent of the veterinary art, for had not the Odiham Society, shortly after its foundation, taken measures to improve the then state of our science in all which related to the medical treatment of animals, it is impossible to tell how long England would have remained without a veterinary school, even with the example of France before her eyes.

Howëver much, as a profession, we may be indebted to the patrons of the turf and the hunting field for our present position, we owe none the less to the agriculturist and

proprietor of cattle and sheep. Indeed, the great bulk of our members being located in country towns, draw both their patronage and support from the farming community ; and it is here too that veterinary science steps from the narrow bounds of "horse pathology," where many are still desirous of keeping her, and ministers to the sufferings and wants of every animal which man has subjected to his requirements. Nor is this without a corresponding benefit to herself, for as with an edifice so with science, the broader the basis on which it is reared the greater will be its value, durability, and strength. From general principles such as these, we can descend to particulars and still find ourselves on vantage ground. Scarcely an agricultural society of any magnitude now exists but it has its veterinary referee or inspector ; and the time is not far distant when all will have to make similar appointments. What has brought about this improved state of things, if it be not the means which of late years have been employed to improve our knowledge of cattle pathology ? And to whom is the chief merit due of accomplishing this, if not to the Royal Agricultural Society in its connexion with our *Alma Mater* ? For these and similar reasons which, did time and space permit, we could advance, we are desirous of placing before our readers a few comments on the late meeting at Chelmsford, being assured that we do good service to our profession by drawing its attention to the best and most valuable animals which the country possesses. There is one novel feature in the meeting to which we must first allude, and that for the purpose of expressing our desire that what has been begun so well and with so much *esprit de corps* will be continued in after years, viz., the giving of prizes to foreign breeds of cattle and sheep. If there is one section of the arts and sciences which will tend more than any other to keep us united in the "bond of brotherhood" with our neighbours and allies on the other side of the channel it is agriculture. In this there is matter enough both for discussion and the expression of differences of opinion without a risk being run of slackening the cords of friendship which bind us together. Nay, these very differences and interchanges of opinion will

but tend to cement us more closely and lead to our mutual advantage and improvement in many things.

With regard to the French cattle which were sent to the show, undoubtedly the best were the Charollais. The cow was a perfect specimen of this breed, and far excelled the bull which accompanied her in quality and conformation. We have heard much of the milking properties of the Charollais cattle, and we doubt not, if all be true which is said of them, that a cross with our short-horns would prove advantageous. This cow, which is the property of the Comte de Bouillé, not only obtained the first prize of twenty sovereigns, but was the winner of the *premier prix* at the *Concours Universel* at Paris of the present year. The bull also belonged to the Comte, and to him was likewise awarded the first prize of thirty sovereigns. The second prize in this class was awarded to a Normandy bull, the property of M. Cheradame; the third to a beautiful little animal of the *race Bretonne*, belonging to M. Allier, Director of the Agricultural College of France; the fourth to a Normandy bull belonging to M. Eluard; and the fifth to a bull of the same breed, the property of M. Philippe. The second prize in the cow class was also given to M. Eluard, for his Normandy cow; the third to M. Allier, for his "Rosa Bonheur," of Brittany; and the fourth to M. Dutrone, for his polled Normandy cow.

We were particularly struck with the great resemblance which the polled Normandy bore to our Suffolk cattle, and recognised in them a family likeness too strong to be merely the result of accident. Either the Suffolks are their progenitors or ours have sprung from them, a question which, at this distance of time, would take more investigation than we can now give to it. In their general conformation they show a greater aptitude to accumulate flesh than our Suffolks; but possess an equal constitutional tendency to furnish a large supply of milk. The *race Bretonne* are specimens in miniature of good feeding and milking animals—perfect pictures—fit to grace the parks and meads of Royalty. Their plump bodies and soft elastic skins fully maintained the simile that a good ox should handle like "a wool-pack well filled."

Our own established breeds of Short-horns, Herefords, and Devons, quite maintained their world-wide celebrity; while the "cattle of other breeds" were better represented by the polled Suffolks than we are wont to see at most meetings of the Society. Our space will not allow of any lengthy remarks on the merits of these respective classes. Where all is good there can be little to condemn, even by the severest critics. Against the awards of the cattle judges we scarcely heard a demur, nor did we hear many complaints of over-fatness; indeed, in this respect, there is a marked improvement gradually being introduced. "Master Butterfly," the winner of the first prize in the short-horn class, is the most perfect animal we have ever seen. He has been sold by Mr. Townley for the unprecedented sum of 1200 guineas, with a view to his being taken to Australia. The purchaser is reported to be a Mr. Ware, of Camperdown, Geelong, Victoria.

The awards in the cattle classes were as follows :

SHORT-HORNED CATTLE.

CLASS 1.—*Bulls, calved previously to the 1st of July, 1854, and not exceeding four years old.*

First Prize, of 30*l.*, to No. 1, Lieut.-Col. Towneley, of Towneley Park, Burnley, Lancashire.

Second Prize, 15*l.*, to No. 2, Henry Ambler, of Watkinson Hall, Halifax, Yorkshire.

CLASS 2.—*Bulls, calved since the 1st of July, 1854, and more than one year old.*

First Prize, 25*l.*, to No. 20, F. H. Fawkes, of Farnley Hall, Otley, Yorkshire.

Second Prize, 15*l.*, to No. 22, Mark Barroby, of Dishforth, Thirsk, Yorkshire.

CLASS 3.—*Bull calves, above six and under twelve months old.*

The Prize, 5*l.*, to No. 37, Henry Ambler, of Watkinson Hall, Halifax, Yorkshire.

CLASS 4.—*Cows, in milk or in calf.*

First Prize, 20*l.*, to No. 46, Lieut.-Col. Towneley, of Towneley Park, Burnley.

Second Prize, 10*l.*, to No. 45, Lieut.-Col. Towneley.

CLASS 5.—*Heifers, in milk or in calf, not exceeding three years old.*

First Prize, 15*l.*, to No. 55, Lieut.-Col. Towneley.

Second Prize, 10*l.*, to No. 57, Richard Stratton, of Broad Hinton, near Swindon, Wilts.

CLASS 6.—*Yearling heifers.*

First Prize, 10*l.*, to No. 75, Richard Booth, of Warlaby, Northallerton, Yorkshire.

Second Prize, 5*l.*, to No. 70, Charles Pascoe Grenfel, of Taplow Court, Maidenhead, Berks.

HEREFORDS.

CLASS 1.—First Prize, 30*l.*, to No. 81, Lord Berwick, of Cronkhill, Shrewsbury.

Second Prize, 15*l.*, to No. 79, Edward Price, of Court House, Pembridge, Hereford.

CLASS 2.—First Prize, 25*l.*, to No. 85, William Raester, of Thinghill, Withington, Hereford.

Second Prize, 15*l.*, to No. 83, Edward Williams, of Llowes Court, near Clirow, Radnor.

CLASS 3.—The Prize, 5*l.*, to No. 94, William Perry, of Cholstrey, Leominster.

CLASS 4.—First Prize, 20*l.*, to No. 96, William Perry, of Cholstrey, Leominster.

Second Prize, 10*l.*, to No. 100, Philip Turner, of the Leen, Pembridge, Leominster.

CLASS 5.—First Prize, 15*l.*, to No. 104, Lord Berwick, of Cronkhill, Shrewsbury.

Second Prize, 10*l.*, to No. 103, William Raester, of Thinghill, Withington, Hereford.

CLASS 6.—First Prize, 10*l.*, to No. 114, William Raester, of Thinghill, Withington, Hereford.

Second Prize, 5*l.*, to No. 108, Walter Maybery, of Brecon.

DEVON CATTLE.

CLASS 1.—First Prize, 30*l.*, to No. 128, John Quartly, of Champson Molland, South Molton, Devon.

Second Prize, 15*l.*, to No. 120, W.M. Gibbs, of Bishops Lydeard, Taunton.

CLASS 2.—First Prize, 25*l.*, to No. 130, H.R.H. Prince Albert.

Second Prize, 15*l.*, to No. 135, John C. Halse, of Molland, South Molton, Devon.

CLASS 3.—The Prize, 5*l.*, to No. 138, George Turner, of Barton, Exeter.

CLASS 4.—First Prize, 20*l.*, to No. 148, James Quartly, of Molland House, South Molton, Devon.

Second Prize, 10*l.*, to No. 143, Walter Farthing, of Stowey Court, Bridgewater.

CLASS 5.—First Prize, 15*l.*, to No. 159, James Quartly, of Molland House, South Molton.

Second Prize, 10*l.*, to No. 152, H.R.H. Prince Albert.

CLASS 6.—First Prize, 10*l.*, to No. 167, Edward Pope, of Great Toller, Maiden Newton, Dorset.

Second Prize, 5*l.*, to No. 173, James Hole, of Knowle House, Dunster, Somerset.

OTHER BREEDS.

(*Not including Short-Horns, Herefords, or Devons.*)

CLASS 1.—*Bulls, calved previously to the 1st July, 1854, and not exceeding four years old.*

First Prize, 20*l.*, to No. 178, Lord Sondes, of Elmham Hall, Thetford.

Second Prize, 10*l.*, to No. 175, James S. Turner, of Chyngton Farm, Seaford, Sussex.

CLASS 2.—*Bulls, calved since the 1st July, 1854, and more than one year old.*

The Prize, 10*l.*, to No. 180, G. D. Badham, of the Sparrows Nest, Ipswich.

CLASS 3.—*Cows, in-milk or in-calf.*

First Prize, 10*l.*, to No. 183, James Gorringer, of Tilton-Selmeaton, Lewes.

Second Prize, 5*l.*, to No. 186, Thomas M. Hudson, of Castle-Acre, Swaffham.

CLASS 4.—*Heifers in-milk or in-calf, not exceeding three years old.*

The Prize, 10*l.*, to No. 192, Lord Sondes, of Elmham Hall, Thetford.

CLASS 5.—*Yearling heifers.*

The Prize, 5*l.*, to No. 196, G. D. Badham, of the Sparrows Nest, Ipswich.

SHEEP.—A finer collection of these animals, perhaps, has never been brought together at any former meeting of the Society. The Southdowns were excellent, and the Cotswolds left nothing to be desired. The Leicesters were also well represented, and were in greater request than of late by foreign purchasers. Many of the sheep, like the cattle, realised great prices. Indeed, this must ever be the case, or at least so long as the Old and the New Continent vie with each other and with the "Land of Gold," for the possession of the best of fair England's flocks and herds. We are unwilling to criticise the decision of the judges, but we cannot refrain from recording our opinion in favour of those who thought that the merits of Mr. Jonas Webb's sheep were not duly appreciated, as likewise those of some of the animals belonging to other Southdown breeders. Mr. Overman's sheep, the winner of the first prize in Class 1, was unquestionably a fine animal, but to our mind he was deficient in some of his points, also in the quality of his wool and general condition, to others in the yard.

The awards in the sheep classes were :

LEICESTERS.

CLASS 1.—*Shearling rams.*

First Prize, 25*l.*, to No. 332, Thos. E. Pawlett, of Beeston, Sandy, Beds.

Second Prize, 15*l.*, to No. 333, Thomas E. Pawlett, of Beeston.

CLASS 2.—*Rams of any other age.*

First Prize, 25*l.*, to No. 368, Thomas E. Pawlett, of Beeston.

Second Prize, 15*l.*, to No. 375, R. W. Creswell, of Ravenstone, Ashby-de-la-Zouch.

CLASS 3.—*Pens of five shearling ewes of the same flock.*

First Prize, 20*l.*, to No. 386, J. G. Watkins, of Woodfield, Ombersley, Worcester.

Second Prize, 10*l.*, to No. 388, George Turner, of Barton, Exeter.

SOUTH-DOWN, OR OTHER SHORT-WOOLLED SHEEP.

CLASS 1.—First Prize, 25*l.*, to No. 434, Henry Overman, of Weasenhams, Rougham, Norfolk.

Second Prize, 15*l.*, to No. 407, Jonas Webb, of Babraham, Cambridge-shire.

CLASS 2.—First Prize, 25*l.*, to No. 454, Lord Walsingham, of Merton Hall, Thetford.

Second Prize, 15*l.*, to No. 453, Lord Walsingham.

CLASS 3.—First Prize, 20*l.*, to No. 498, Lord Walsingham.

Second Prize, 10*l.*, to No. 490, Lord Walsingham.

LONG-WOOLLED SHEEP ;

not qualified to compete as Leicesters.

CLASS 1.—First Prize, 25*l.*, to No. 506, James Walker, of Northleach, Gloucester.

Second Prize, 15*l.*, to No. 503, Thomas Beale Brown, of Hampen, Andoversford, Gloucester.

CLASS 2.—First Prize, 25*l.*, to No. 531, William Lane, of Broadfield Farm, Northleach, Gloucester.

Second Prize, 15*l.*, to No. 538, William Garne, jun., of Kilkenny Farm, Bibury, Gloucester.

CLASS 3.—First Prize, 20*l.*, to No. 551, William Lane, of Broadfield Farm, Northleach.

Second Prize, 10*l.*, to No. 550, William Lane, of Broadfield Farm, Northleach.

PIGS.—“*Boars of a large breed.*”—With one or two exceptions these animals were good. Those not properly entitled to this distinction were rather coarse, and some of the younger ones defective in the formation of their backs and shoulders. The first prize of £10, in Class 1, was awarded to a black boar, No. 568, the property of the Rev. T. C. James, of Ermington, Ivy Bridge, Devon. This animal had

a fair quantity of hair, and which we should have liked better had it been of finer texture. We are not among the advocates of *hairless* pigs, but give the preference to a uniform hirsute covering of the body of the finest quality, as nature's best means of protecting the skin from the scorching influence of the solar rays of summer, and the sedative effects of the cold of winter.

The second prize of £5 in this class was given to No. 560, J. Harrison, Jun., of Heaton Norris, Stockport. The other awards in the pig classes were:—

CLASS 2.—*Boars of a small breed.*

First Prize, 10*l.*, to No. 589, Thomas Crisp, of Chillesford Lodge, Woodbridge, Suffolk.

Second Prize, 5*l.*, to No. 592, Richard England of Arthington, Otley, Yorkshire.

CLASS 3.—*Breeding sow of a large breed.*

The Prize, 10*l.*, to No. 604, William B. Wainman, of Carhead, Cross Hills, Yorkshire.

CLASS 4.—*Breeding sow of a small breed.*

The Prize, 10*l.*, to No. 631, H. Scott Hayward, of Folkington, Willingdon, Sussex.

CLASS 5.—*Pen of three breeding sow-pigs of a large breed, of the same litter, above four and under eight months old.*

The Prize, 10*l.*, to No. 650, Rev. Charles Thomas James, of Ermington, Ivy Bridge, Devon.

CLASS 6.—*Pen of three breeding sow-pigs of a small breed, of the same litter, above four and under eight months old.*

The Prize, 10*l.*, to No. 656, Robert H. Watson, of Bolton Park, Wigton, Cumberland.

Among the “boars of a small breed” were two or three animals which might more properly have been placed with those of the large breed, and others also that were too much overloaded with fat. In this class two animals were disqualified, as the state of their dentition indicated that they exceeded the age named in the owner's certificate.

The “sows of a large breed” were on the whole very good. There were, however, two of them of the largest size and least attractive form to breeders we have almost ever seen. Their long bodies, arched backs, and gaunt sides strangely contrasted with others in the class, and drew forth many a

ludicrous remark from the visitors. Some very superior animals were shown among the "sows of a small breed;" but a few of them had too great a tendency to accumulate flesh at the expense of their reproductive powers. An animal in this class was likewise disqualified from over age. The young breeding sows, both of the large and small varieties, left nothing to be desired in the excellency of their quality. The black and the white breeds vied with each other for public favour, which seemed to be pretty equally divided between them.

HORSES.—Before commenting on this part of the show, we would say a word in commendation of the local committee, by whose exertions the finest and best horses for the field operations of the Society were brought together that have ever been seen. The selection did great credit to their taste and judgment, and we should imagine that they had to look far and wide to obtain such a number of superior farm horses for the working of the various implements which were exhibited on the trial ground.

The aged cart-stallions entered for competition were not only more numerous but more equal in symmetry, condition, and soundness than we have been accustomed to see at former meetings. There were so many first-rate animals in the class, that we can but consider that the exertions of the exhibitors merited on the whole a freer distribution of the commendations of the judges. This remark is applicable also to the two-year-old stallions and the two-year-old fillies, which have been seldom equalled and never excelled. With regard to the selection of the prizes, it will not escape our professional readers that something beyond an eye-pleasing appearance is necessary to constitute a fitting animal for such a distinction, a fact which will tend to explain the reason why the public so often passes a severe criticism on the decision of the judges, and more particularly in the horse classes. Making, however, every allowance for the difficulties they have had to encounter in the selection of the *first* prize animal from among so many good ones, and remembering also that the question of freedom from hereditary disease must be kept in mind by them, we still cannot give our unqualified assent to their award. We fear

that excellency of action received in this case more than its just amount of value in determining the selection, and to our minds there were other animals in the class that merited the distinction in preference to the one chosen. We are also somewhat at a loss to understand why the superior qualities of one or two animals in the class of fillies did not outweigh those of their competitors to whom prizes were awarded.

For the special prizes of horses, given by the local committee, there was a spirited competition, and several good animals were consequently exhibited. The judges, however, deemed it right to withhold the prize in the class of "hunter mares," for want of sufficient merit. To us, it is questionable whether, in the allotment of these special prizes, coaching stallions should be retained. We cannot stop to discuss the *pros* and *cons* of the different advocates, but will only add, that experience has proved that hereditary diseases reach there acme here. In the award which we append, it will be seen that our French friends received *special* commendations for two cart-stallions, which their good feeling alone must have prompted them to send for competition with the best of our English horses.

AWARD.

AGRICULTURAL HORSES GENERALLY.

CLASS 1.—*Stallions for agricultural purposes, foaled previously to the 1st of January, 1854.*

First Prize, 30*l.*, to No. 228, H.R.H. Prince Albert.

Second Prize, 20*l.*, to No. 202, Manfred Biddell, of Playford, Ipswich.

CLASS 2.—*Stallions for agricultural purposes, foaled in the year 1854.*

First Prize, 20*l.*, to No. 271, G. M. Sexton, of Earls Hall, Cockfield, Sudbury.

Second Prize, 10*l.*, to No. 258, G. D. Badham, of the Sparrows' Nest, Ipswich.

CLASS 3.—*Agricultural stallions, foaled in the year 1855.*

The Prize, 15*l.*, to No. 278, Samuel Clayden, of Little Linton, Cambridge.

CLASS 4.—*Mares and foals for agricultural purposes.*

First Prize, 20*l.*, to No. 290, George Carter, of Danbury, Chelmsford.

Second prize, 10*l.*, to No. 297, N. G. Barthropp, of Cretingham Rookery, Woodbridge.

CLASS 5.—*Two-year old fillies for agricultural purposes.*

First Prize, 15*l.*, to No. 311, Samuel Wrinch, of Great Holland, Colchester.

Second Prize, 10*l.*, to No. 313, Samuel Clayden, of Little Linton, Cambridge.

DRAY-HORSES.

CLASS 1.—*Stallion foaled previously to the 1st of January, 1854.*

The Prize, 20*l.*, to No. 327, William Baker and Son, of Bury Farm, Stapleford, Cambs.

CLASS 2.—*Stallion, foaled in the year 1854.*

The Prize, 15*l.*, to No. 328, Charles Timm, of Scrooby House, Bawtry.

CLASS 3.—*Mare, with a foal at her feet.*

The Prize, 10*l.* No competition.

CLASS 4.—*Filly foaled in the year 1854.*

The Prize, 5*l.* No competition.

The judges specially commend the undermentioned as specimens of French horses:

No. 243 _A	} Mons. Duchateau's stallions.
„ 243 _B	

SPECIAL PRIZES GIVEN BY THE LOCAL COMMITTEE OF
CHELMSFORD.

HORSES.

CLASS 1.—*Thorough-bred stallions.*

The Prize, 30*l.*, to No. 670, Messrs. Robert and James Moffat, of Newton-of-Rockliffe, Carlisle.

CLASS 2.—*Hunter stallions.*

The Prize, 30*l.*, to No. 673, Samuel Adams, of Great Waltham, Chelmsford.

CLASS 3.—*Coaching stallions.*

The Prize, 25*l.*, to No. 686, George Rayson, of Highhead Castle Farm, Carlisle.

CLASS 4.—*Hackney stallions.*

The Prize, 25*l.*, to No. 693, William Jex, of Hopton, Lowestoft, Suffolk.

CLASS 5.—*Hunter mares.*

The Prize, 20*l.*—Prize withheld.

CLASS 6.—*Hackney mares.*

The Prize, 20*l.*, to No. 707, Rev. Charles Thomas James, of Ermington, Ivy Bridge, Devon.

CLASS 7.—*Geldings of any age, for hunting purposes.*

The Prize, 15*l.*, to No. 717, Frederick Barlow, of the Shrubbery, Hasketon, Woodbridge.

CLASS 8.—*Geldings under four years old, for hunting purposes.*

The Prize, 10*l.*, to No. 725, Earl of Darnley, of Cobham Hall, Gravesend.

CLASS 9.—*Hackney geldings of any age.*

The Prize, 15*l.*, to No. 728, Francis Barker, of Westlands, Ingatestone, Essex.

CLASS 10.—*Hackney geldings under four years old.*

The Prize, 10*l.*, to No. 731, Frederick Barlow, of the Shrubbery, Hasketon, Woodbridge.

Enough has been said, in the few remarks we have penned on this *concours général* of the English Agricultural Society, to show the continuous efforts which are made at progress and improvement; still we cannot refrain from observing that, in other respects, besides the bringing together of the largest number of our best animals for competition, the Essex meeting will ever be distinguished in the annals of agriculture, as marking a new epoch in its history, by the successful application of steam power to the cultivation of the land. Fowler's steam plough, manufactured by Ransome and Sims, has solved this long disputed problem; and the way in which it turned over a fair breadth of land excited the admiration of all who witnessed it; nor does it appear that the cost of the working will hereafter be an impediment to the free employment of the apparatus by ordinary farmers. We heard also much praise bestowed on Smith's exertions in the same direction, so that ere long we shall probably witness the engineer with his locomotive wending his way from the homestead to the fields, in the place of the ploughman with his horses, to perform those necessary operations which have for their object the production of food for our ever-increasing population. Let not veterinary surgeons take alarm at this. The application of machinery to man's requirements, creates demand for animal power coequal at least with its extent, and, although horses may not be required so much for some of the daily operations of the farm, they will be needed the more for others; besides this, more mares will be kept for breeding purposes, and necessarily more cattle and sheep for the same intent.

Veterinary Jurisprudence.

KINGDON *v.* MOSS.

THIS was an action brought against a veterinary surgeon for the recovery of the value of a horse alleged by the plaintiff to have been destroyed through the improper administration of a draught by a servant of the defendant.

Mr. Huddleston and Mr. W. James appeared for the plaintiff; and Mr. Overend, Q.C., and Mr. Kerr for the defendant.

The plaintiff, Richard Kingdon, was an attorney; and he sued the defendant, F. W. Moss, a veterinary surgeon in the Vauxhall Road, to recover damages for the improper treatment of a mare, which died in consequence. It appeared that on the 19th of December last the defendant had been called in to attend the plaintiff's mare for what appeared to be a severe cold, and administered medicine. On the 21st he sent his servant to administer a draught, and, according to the evidence given by the plaintiff's servant, the man fastened the mare's head by a cord to a beam of the stable, and so poured the draught down. The mare immediately began to cough and kick about, and in other ways to show signs of great pain. This brought the plaintiff into the stable, and he at once told the man that he had killed the mare. The defendant continued to attend the mare till the 31st of December, when she died. On a post-mortem examination it appeared, according to the evidence of medical witnesses called for the defendant, that the mare died of pleuro-pneumonia; but in the left lung there were tubercles in various stages, also an abscess which had broken, and adhesions between the lungs and ribs. On the part of the plaintiff it was contended, that the pleuro-pneumonia arose from some foreign substance, the medicine having gone the wrong way, and so got into the air passages of the lungs; while the defendant contended that the death arose entirely from natural disease, which was evidently of some standing. It was admitted by the defendant and his witnesses, that it was improper to fix a horse's head when administering medicine; but the fact was denied by the man, who said he had so tied the halter to the beam by a slip knot, that he could in a moment set the horse's head free by pulling the cord.

Lord Campbell, in summing up the evidence, said it was for the jury to say whether or not there had been improper treatment, and whether that treatment had caused or accelerated the death.

The Jury were some time before they agreed upon their verdict. They agreed that there had been improper treatment, and two of them were of opinion that the treatment accelerated the death, but the other ten jurymen hesitated on this point.

Lord Campbell told them that if they were of opinion that there had been improper treatment, and that that had accelerated the death, or done any harm whatever to the mare, it was the duty of the jury, in point of law, to find their verdict for the plaintiff; but the amount of the damages was entirely for the jury.

Ultimately the jury found for the plaintiff—Damages, £5.

Mr. Huddleston applied for a certificate that the cause was a proper one to be tried in a superior court.

Lord Campbell granted the application.

[It being probable that a new trial will take place in this case, we refrain from making any lengthy comments upon it.

No veterinary surgeon in extensive practice can superintend the administration of all the medicine to his several patients which he daily prescribes; and therefore, as he is bound for the acts of his servants, it behoves him to take care that he has in his employ those who are competent to the performance of such duty. In the present case, no want of professional skill is attributed to *Mr. Moss* in the treatment of the case; and the simple question, as it appears to us, is, whether the man had recourse or not to the right method of administering a draught? Animals differ in their temperament; and many, even when suffering from acute disease, and consequent prostration of the vital powers, will resist to the utmost the exhibition of medicine, either in the form of draught or ball. With such animals various expedients are resorted to, and to a great extent these are legitimate and consequently to be defended. Care, however, should be especially taken in such cases, that everything is done properly, and that proper instruments and adjuncts are employed. Whether the mare in question was such a one as we have alluded to, or whether the man fastened her head to the beam as being his common practice, does not appear from the report; if the latter, we venture to ask if the plan is a right and proper one? Without prejudice to the case, we may say that an animal in such a position would deglutate with great difficulty, and that an accident, such as is said to have occurred, is more likely to take place than when an elevator, entrusted to the care of an assistant, is employed to raise the animal's head to a convenient height.]

MISCELLANEA.

THE BABRAHAM SHEEP SHOW.

THE thirtieth anniversary of this show was held on Friday, July 11th, on Mr. Jonas Webb's home farm. The principal object of attraction to the visitors was, of course, the sheep, which were penned as usual in a paddock near the house. As Mr. Webb's anniversaries have augmented in number so have his sheep progressed towards perfection, and it was the unanimous opinion of those present that he never exhibited animals which would bear comparison with the sheep in the ring on Friday. Curiosity in this respect being satisfied, considerable interest was exhibited in the inspection of the magnificent *candelabrum* presented to Mr. Webb by the Emperor of the French.

From the house the visitors proceeded to inspect a herd of shorthorns, to the breeding of which Mr. Webb has of late years turned his attention, and the points exhibited by these animals elicited auguries of his success also in this department of agriculture.

For all comers a substantial lunch was provided, Mr. King, of the firm of Nockolds and King, presiding. Among those present on the ground were:—the Hon. E. T. Yorke, M.P., chairman of the dinner; Lord Walsingham, Count de Boileau, M. St. Marie (French Minister of Agriculture), Count de Vitry, M. de Champigny, M. de Pazzis, M. Caron (Boulogne), M. Borie (Secretary of the *Journal d'Agriculture Pratique*), M. Allier (agent for the Emperor of the French), M. Eugène Gareau (Député au Corps Législatif), M. Trehonnois, Mr. D. Waddington, M.P., Colonel Brise, Captains Goodwin and Pardoe, Major Wilkinson, Revds. C. Townley, J. Singleton, H. Goodwin, J. Graham, W. Acton, Holcombe, J. C. Peele, Sutton, Battiscombe, and H. Greene; Messrs. Adeane, Du Cane, Bullock, Milward, Gordon, W. F. Hobbs, Mechi, F. Pym, St. Quintin, E. Hicks, Wilkinson, P. Tillard, D. Herbert, Cropley, Batson, Moseley, S. Vaisey, Fordham, Evans, Davis, Baldwin, Thurnall, Mayd, Tanqueray, Thompson (Duke of Beaufort's agent), Wood (Lord Walsingham's agent), Wood (Mr. Foljambe's agent), Moore (Lord Radnor's agent), Ekin (Mayor of Cambridge), Rosher, Garrett, Sabertons (2), Martins (2); also the agents of Lords Yarborough and Leicester and Lady Grenville.

The number of sheep penned was as under:

Five-years old—three, started from 10 to 40 guineas; the clips weighing from 8 lb. to 8 lb. 8 oz.

Four-years-old—seven, put up at from 8 to 25 guineas; clips from 8 lb. to 10 lb.

Three-years-old—seventeen, valued at from 11 to 50 guineas; clips 6 lb. 8 oz. to 10 lb.

Two-years-old—thirty-three, put up at from 8 to 80 guineas; clips 6 lb. to 10 lb.

Yearlings—sixty-four, run in at from 6 to 50 guineas; clips 6 lb. to 9 lb. 2 oz.

Of these, 77 were run into the ring and disposed of. The letting commenced about two o'clock, and some of the best tups soon changed owners for a brief season. The first (No. 11) was knocked down to M. Allier, after a spirited bidding, for 93 guineas, having been started by Mr. Webb at 40 guineas. The third tup excited vigorous competition, and was secured by Lord Chichester for 130 guineas, having been started at 80 guineas; the clip of this sheep was 8 lb. 12 oz. The next also fell to the lot of M. Allier, on behalf of the Emperor of the French, the price being 131 guineas—this sheep was run in at 80 guineas; the clip being 8 lb. 12 oz. The biddings were sharp and quick for the premier sheep—from 80 guineas (he was a two-year-old) up to 120 guineas; but at this long price some of the competitors retired, and they gradually fell off, till M. Allier was almost alone in the field, so far as bidding was concerned. The total produce of the sale was £2546 5s. The dinner afterwards took place, at which about 250 gentlemen were present.

The chair was taken by the Hon. E. T. Yorke, M.P., supported by Count Boileau, M. St. Marie, Lord Walsingham, Mr. T. St. Quintin, Hon. Victor Yorke, Mr. D. Waddington, M.P., Mr. C. du Cane, Mr. H. J. Adeane, M. Gareau, M. Allier, and Mr. E. Hicks.

ARMY APPOINTMENTS.

1st Dragoons, Probationary Veterinary Surgeon Evander Chambers to be Veterinary Surgeon, *vice* Cherry, deceased.—*London Gazette.*

THE LEGION OF HONOUR AND THE ENGLISH OFFICERS.

By a decree of his Imperial Majesty Napoleon III, which has been just published in the *Moniteur*, the order of the LEGION OF HONOUR, on the proposition of the Minister of Foreign Affairs, is conferred on a considerable number of British officers who have served with "the Army of the East," and among them we were much gratified to find the name of "Veterinary Surgeon John Surtees Stockley."

OBITUARY.

WE regret that our obituary is added to this month by the death of Veterinary Surgeon Elkes, of the Land Transport Corps, through the occurrence of a very melancholy accident. The particulars of this sad event will appear in the sequel of the following narrative, which we extract from *The Times*. Mr. Elkes had only just entered on his professional career, having obtained his diploma as lately as May, 1855.

INCIDENTS AT THE CAMP AT BALTSCHIK.—To render the recurrence of the miseries endured by our army in the Crimea from short rations impossible, the government established at several points, within easy distances of the Crimea, dépôts of horses, bullocks, sheep, and other stores upon a scale of considerable magnitude. One of these dépôts was formed at Baltschik, a few miles from Varna, and a detachment of the Land Transport Corps, of the Turkish Contingent, commanded by a few English officers, was stationed there as a guard, and appeared to obtain for themselves the good-will of the people of the country. Lately, however, atrocities of the most revolting character have been perpetrated by them on the soldiers and officers of the force in charge of the dépôt, and within a few days prior to the date of our correspondent's letter (the 10th of June), no less than four murders had taken place. One victim to the cowardly and murderous attacks of these blood-thirsty villains was Mr. William Peirce, a lieutenant of the before-mentioned corps. On Thursday, the 5th of June, he left the camp, attended by one private leading three horses, with the intention of going to Varna. There not being any regular road, they had to proceed for some miles through the wood that lies between Varna and the camp; but, it being quite light (six o'clock in the morning), and they anticipating to complete the journey before noon, both Mr. Peirce and his attendant were unarmed. They had not, however, proceeded more than nine miles when the soldier, who was riding in the rear of his officer, observed a man suddenly appear in a bush at the side of the path they were pursuing, and, simultaneously with the crack of a rifle, beheld Mr. Peirce stretched lifeless on the ground. At once discerning that all hope of resistance would be futile, the soldier threw himself from his horse and plunged into the brushwood, followed by three musket balls discharged by the bandits. Fortunately, this time their aim was erring, and the man escaped with much bodily fatigue to the seaside, and late in the day made his way back to the camp, where the melancholy news aroused, as might be

anticipated, feelings of the deepest regret and indignation. Instantly every man not on duty, armed, mounted his horse and galloped to the scene of the revolting murder. The body was found quite dead, the ball having entered his right breast in a position instantly to cause death. His pockets had been rifled, his watch taken, and the five horses stolen. The corpse was conveyed by some of the soldiers to Baltschik, and upon the return of those who scoured the country (though unsuccessfully) in search of the miscreants was buried there with full military honours. Mr. Peirce was much beloved by his brother officers and the men of his company, who were at the time of the despatch of our correspondent's letter eager for the confirmation of a report that had reached them of the apprehension of four men, who, there appeared to be little doubt, were the actual murderers, as the horses were reported to be found in their possession.

Hardly had the camp recovered from the shock produced by the before-mentioned painful occurrence, when it was again plunged into still deeper gloom on the following Tuesday by an event attended with equally fatal consequences, though the result of accident. It appears that Mr. Elkes, the veterinary surgeon of the detachment, had, a few days prior to this date, given a full-dress dinner to the officers in honour of his birthday, and among the guests was an old college friend named Western, who was so anxious to be present that he came from Balaklava to the dinner. Huts being scarce, Mr. Elkes and his friend had to sleep in the same room, and from the insecurity that reigned around, each had his arms by the side of his bed. Before daylight on the morning of the 10th of June, Mr. Elkes, for some cause which will ever remain a mystery, got up and moved about the hut, but it was too dark for his friend to recognise him. Mr. Western said, "Elkes, there is some one in the room, and if they do not speak I will fire;" but he made no reply. Mr. Western again called out, "Fred (meaning Mr. Elkes), I see the shadow of a man moving in the room, and if he does not speak I will fire;" but still no answer. He fired, and the ball went through the heart of his friend, who fell exclaiming, "Oh, Western, you have shot me through the heart," and never spoke more. The father of Mr. Western is a clerk of high standing in the bank of England, who will doubtless feel most deeply the melancholy tidings. Mr. Western is placed under arrest, though he will upon his trial be acquitted, as he is entirely free from blame, and appears to have exercised much forbearance in refraining to fire so long, having the murder of Mr. Peirce, which only occurred a few days before, fresh in his memory.



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Communications and Cases.

CLINICAL LECTURE ON DISLOCATION OF THE
FEMUR.

By JOHN GAMGEE,

Professor of Anatomy and Physiology, and
Clinical Lecturer in the Edinburgh Veterinary College.

From Notes by Mr. WILLIAM ALLEN FIELD, Student.

THE dislocations of joints are more rarely witnessed, and less easy to reduce, in the larger domestic quadrupeds than in man or the smaller animals. Many reasons are to be assigned for this. 1st. Where movement is most extensive there is the greatest tendency to displacement of the articular surfaces. 2dly. In the beast of burthen the conformation of his body adapts him for sudden and extraordinary muscular efforts. This adaptation depends on the character of the joints of both limbs and trunk, as well as on the relative length and bulk of bones, and distribution of muscles. Freedom of motion is in various ways sacrificed to ensure firmness and solidity, and if once the firm and solid bonds of union suffer, they are with difficulty restored to their natural state. 3dly. In comparing man, in this respect, with the horse or cattle, we find that animals do not strive to do impossible things; they have no spontaneous inclination for the execution of feats, and though they often have occasion to manifest strength and activity, it is in ways natural to them that these are displayed.

Accidents will and do occur, so that even in the firmly built quadruped there is scarcely a single joint that may not be displaced, though at the expense of ligamentous ruptures, and fractures of bone. Dislocations are almost invariably

complicated, except in ill-nourished young animals, in which the articular ends of bone are deficient in breadth, and in which the ligaments readily yield and lengthen, when continuously on the stretch. Spontaneous dislocations of the fetlock-joints in colts are thus explained; and I have seen both elbow-joints in a young terrier luxated, without fracture or laceration of the soft textures.

If the shoulder- or hip-joints in horse or cattle be the seat of luxation, whether partial or complete, there is invariably some superadded lesion, and it is of the greatest practical utility to study these complications, with the view of recognising their nature and extent in the living animal. I purpose, therefore, drawing your attention to this subject to-day, as you have witnessed, with me, an interesting case of dislocation of the hip-joint, the history of which I will now relate.

In the afternoon of last Monday (June 30th) Mr. John Cairns, of Gilmore Park Dairy, called upon me to attend a cow that had met with an accident, through which the off hind leg was rendered perfectly useless, as if paralysed. I at once visited the animal, and gleaned that on the previous afternoon, as the cows entered the byre on their return from the fields, my patient was walking quietly along, but, on turning into her stall, she slipped with her off hind foot, in getting on to the elevated part of the brick pavement, on which the cows are made to lie. A drain about six inches deep runs along behind the animals, to carry off both fæces and urine, and into this drain the foot slipped. The cow, in missing her step, fell, struggled, and rose again, but on three legs. She stood some time, and then lay down for the whole night; on the morning of Monday, Mr. Cairns tried to sling her, but failed in all attempts to keep her in the erect posture. When I saw the cow she was lying comfortably on her near side, apparently in no pain, with the injured limb totally useless; its muscles were flaccid, and the tendo Achillis quite relaxed. The femur was at an acute angle to the ilium. The trochanter major had slipped downwards, backwards, and inwards, so that the stifle-joint was turned outwards, and there was a flatness or hollow aspect about the muscles of the upper third of the thigh; there was also slight tumefaction over the hip-joint. The lower part of the limb was stretched out, and the distance from hip to toe was greater than on the opposite side by nearly three inches.

It was evident that the trochanter did not stand out prominently, as in the normal condition of the part, but was drawn backwards and inwards from displacement of the head of the femur; the latter, I immediately thought, must be lodged in

the obturator foramen. The dislocation was complete. The round ligament must have been ruptured, and it behoved me to look for any complication by fracture. I had the limb alternately drawn backwards and forwards; it was more readily stretched in the latter direction. I had it moved upwards and downwards, but could detect no crepitation, or other sign of fracture. The shaft of the bone was sound.

My opinion as to the probable issue of the case was excessively unfavorable, but I was urged to adopt all available means, if any treatment could be attempted, as the cow was too poor to slaughter, and valuable as a milker. The difficulty of reduction could be surmounted, as previous experience had taught me, but I had little faith in retaining the bones in their proper place. I thought that should the operation be fraught with little good, no harm could attend it, and, in case of failure, I trusted to the formation of a false joint, and that the animal would live comfortably, and fatten for the butcher.

On the morning of Tuesday, at ten o'clock, accompanied by Messrs. Field and Farrell, I proceeded to Gilmore Park Dairy. The cow was in the same condition; and, having procured the assistance of eight or ten men, I attempted reduction in the following manner:—A good bed of straw was made in the cow's own stall; she was turned with her hips towards a stout partition post, and chained to the latter by means of an ordinary cart-horse's breeching. The latter was made to pass between the thighs, stretching over the antero-inferior spine of the ilium on the right side and over the left ischiatic notch; the broad part of the breeching came therefore to press over the pubis. The three sound legs were tied together, the head held secure, and two ropes, from which to operate counter-extension, were fixed, the one round the pastern and the other above the hock, the skin being protected by a smooth cloth. A rope was next passed round the thigh, so as to catch the upper third of the femur; it was connected with a pulley suspended from a cross beam. It acted as a fulcrum, and the ends of the femur constituted respectively the arms of resistance and force of a lever of the first order. To Mr. Field I entrusted the pulley rope, so as to modify the abduction or adduction of the femur at will. I requested all free hands to pull steadily on the limb, and ordered them to move to and fro all of one accord, just as I required them. The muscular tension was thus effectually overcome; and, by bodily weighing on the lower end of the tibia, the femoral trochanter was pressed outwards and forwards to its proper situation, without much difficulty, and

the bones replaced with a snap ; but the condition of the parts was so unfavorable, that on moving the limb the dislocation recurred. Reduction was again and again effected, with the same result. I concluded there was some fracture of the acetabulum or of the head of the femur ; but could obtain no positive evidence. The cow was then left in much the same condition as we found her, only somewhat exhausted from the pain and excitement attendant on the operation.

I have seen her this morning (July 3d), and found her in good bodily health, and the dislocation appeared to have been reduced. On inquiry I ascertained that, to relieve the sore surfaces on the left side, Mr. Cairns had the cow turned over on to the right. Struggling in this painful position as she lay on her injured limb, a partial restoration of the parts had occurred. On moving the limb, though with great care, the femur fell back into its old place, and I for the first time recognised a fracture of its head or neck, having obtained clear evidence of bony grating.

If I bring this case under your special notice now, it is to show that the uncertainty of cure depends upon the complications, and not on the difficulty or supposed impossibility of reduction. You will perceive, gentlemen, that extension and counter-extension could be of no avail without the rope and pulley. The men pulled the head of the femur downwards out of the obturator foramen, and I had perfect command over the parts, in virtue of the lever formed by the femur acting on the suspended rope as on a fixed fulcrum.

Under other circumstances you may find yourselves without pulleys and beams ; a barrel or wooden block will then serve to place under the affected thigh, and the conditions required for reduction as efficiently ensured.

Such a case as the one just related is instructive in showing that, if the principle on which to proceed be understood, a little ingenuity may overcome great difficulties. Readiness in the adaptation of means to ends may be an inborn talent, but is unquestionably acquired by education and practice.

(To be continued.)

COMMUNICATION FROM G. H. DADD, M.D.

BOSTON, MASS., U.S.; *July 18, 1856.*

GENTLEMEN,—In the July number of your time-honoured periodical, the *Veterinarian*, I notice an article having refer-

ence to myself, and presuming that you will allow me the privilege of offering a few remarks by way of explanation, I embrace the earliest opportunity of so doing.

At the commencement of your article the reader is informed that you have noticed with commendation the *American Veterinary Journal*, and hail it as a good omen, &c. * * * "Judge our disappointment, not unmingled with disgust, at receiving from America a packet of handbills, of which the following is a copy." Here follows the handbill.

For your commendatory notice of the journal, the Editor tenders his heartfelt thanks, and he shall always strive to make it an exponent and advocate of veterinary science; it has, however, to be conducted in a manner that shall be acceptable to the comprehension of *husbandmen*, as there are not a sufficient number of veterinary surgeons to support such an enterprise.

From the phraseology of your remarks, I infer that the *packet* of handbills was unaccompanied either by note or message, so that the *sender* is *non est inventus*. Should this prove to be the case, then I think I know the man, and contend that he is a contemptible coward, and nothing, save envy, ever tempted him, a *professional man*, to be guilty of such meanness. It was a *cowardly* act, for no good or brave man ever seeks to elevate himself by pulling others down. It was a *mean* act, because public opinion in this country differs very much from that of the *Old World* in relation to the preparation of *horse medicines*. *Here*, it is needed; *there*, you need it not.

Gentlemen, you have feared the worst. In the year 1847, at the earnest solicitation of several very influential husbandmen and gentlemen interested in the welfare of the inferior orders of creation, I engaged in the manufacture of articles as per handbill, and they are still prepared under my advice; and so soon as a respectable number of *legitimate* practitioners make their appearance, or my own convictions assure me that I am doing wrong, I will immediately abandon the business. Had I engaged in such an enterprise in the city of London—its inhabitants rejoicing in being in possession of one of the best veterinary colleges in the world, accessible to all who knock at the door of science, and where can be found a host of highly educated veterinary surgeons whose services can at all times be secured—then, I should deserve censure. But, located on this side of the Atlantic, I ask, Where are our veterinary universities? and echo answers, *Where?* Are the Americans blessed with the

presence of a *host* of veterinary surgeons? No! They are few and far between. We are rich in means for the endowment of such institutions, but as yet there has been no practical application of the same. There are, however, three incorporated veterinary colleges in this country, not one of which has ever gone into operation. At the time to which I allude, the population of the United States amounted to thirty millions, and the value of their live stock reached the enormous sum of five hundred millions of dollars! Here were immense interests at stake, yet, according to the most reliable authority, there were but *fifteen* certified surgeons in the whole country! One veterinary Hercules to every two millions of inhabitants! twenty-six hundred thousand head of live stock* apportioned to each surgeon. Consequently, the great bulk of this description of property could not receive the benefits of veterinary science. Suppose, gentlemen, you had but one veterinary surgeon in the great city of London, which I believe contains two and a half millions of inhabitants, you would then only be a trifle better off than the people of this country were in 1847. Under such circumstances, would not the emergency justify the means? Could it be beneath the dignity of a practitioner to endeavour to mitigate the sufferings of those *bereft of speech*, by putting into the hands of farmers and horse-owners a few medicines for the treatment of our common forms of disease?

The composition of these medicines have *never been kept a secret from the profession*, and they are always accompanied with suitable instructions regarding food and management; the latter, as you are aware, are oftentimes more operative as restoratives than the former. Under such circumstances I have an impression that, in a country where veterinary science scarcely has existence, I am not practising empiricism; for, in addition, I have taken pains to inform myself of the nature of diseases incidental to the stock of this country, and am conversant with the *modus operandi* of medicines.

As regards the "attractive embellishments" which you refer to, I regret that there should be anything offensive in them; they are here considered as *tricks of the trade*, over which I have hitherto exercised but little control, but intend hereafter to use my influence with the manufacturers to suppress everything that shall be likely to offend my professional brethren.

* According to the seventh census the number of all descriptions of live stock was 75,293,150.

I hope I may not be charged as guilty of blowing my own trumpet, in informing you that there is not a more ardent labourer in this country in the cause of veterinary science than myself. I have written over three thousand pages of manuscript for our agricultural periodicals, without receiving one cent remuneration; and have delivered a great number of *free* lectures before agricultural societies in the States of Ohio, Maine, and Massachusetts, and before the Legislatures of the two latter States, and have always urged upon my hearers the importance of establishing veterinary colleges in this republic. Last year I had the satisfaction, aided by a few friends, of obtaining from our Legislature a bill incorporating *The Boston Veterinary Institute*, and have since laboured diligently in endeavouring to secure contributions for its endowment. I submit the preceding paragraph to show that I am not a depraved medical sinner; that there are redeeming points in my professional character, and that I am not the vile empiric the sender of those handbills would have you suppose.

I have no fault to find with your remarks, they are tempered with charity, and I rejoice to know that I have fallen into the hands of foemen that can well afford to be merciful.

I am, Gentlemen, with respect,
Your obedient servant.

To the Editors of the 'Veterinarian.'

CASES OF PHRENIC HERNIA.

By C. DICKENS, M.R.C.V.S., Kimbolton.

It is pleasing to observe, from your "Notices to Correspondents," that you have always plenty of "corn in Egypt;" the supply forwarded to your Journal being more than equal to the demand. May such continue to be the case. But should at any time the contents of this paper, in the absence of better matter, be thought by you worthy of insertion, they are much at your service.

Possibly it may be considered more pleasing to report the successful results of novel operations, the benefits derived from the progress of mechanical ingenuity, or the employment of some new medicinal agent, than to register fatal cases; yet the latter are often both instructive and interesting. They serve, at any rate, to assist us in our future diagnosis, and sometimes they confirm the opinions which have been

cautiously, perhaps hesitatingly, given during the life of the patient; thus convincing our clients that the treatment adopted by us has been consistent with science, and not empirical.

It was a favorite observation of one whose memory both you and I hold in great respect—the late Professor Coleman,—that we often obtained more information from one lost case than we do from twenty successful ones. This, then, must form my excuse for forwarding to you the following cases. They contain nothing new, but I know you are desirous of being in possession of practical matter wherewith to enrich your pages, to which I feel a pleasure in contributing. The first being a recent case, I give it in detail. With reference to the others, they have occurred at different periods of my past practice.

I am, yours truly.

CASE 1.—AN IMPACTED STATE OF THE RECTUM,
FOLLOWED BY RUPTURE OF THE DIAPHRAGM.

June 3d, 1856.—A valuable five-year-old cart-horse, belonging to Mr. Brown, of Leighton Lodge. He did an ordinary day's work yesterday, carting manure; fed well on returning to the stable, and was left for the night, apparently in health. On the horsekeeper visiting him, at four this morning, he was seen to be uneasy; constantly lying down and rolling, and occasionally scraping the litter with his fore feet. Supposing him to be griped, he gave him some castor oil, with a spoonful of laudanum added to it. Relief not being obtained, about three quarts of blood were abstracted from the jugular vein. My first visit was at 10 a.m.

Symptoms.—The animal is lying down, with his head thrust between his fore legs. The surface of the body and legs are warm, but no perspiration; breath very fetid; eyelids nearly closed, vessels of the conjunctiva injected; respiration tranquil; pulse about 60, more full than forcible; abdomen slightly distended with flatus. A small portion of hardened dung has been removed by the hand from his rectum, and I removed two pieces more, which were at the very extremity of my reach. They were scarcely compressible, and thickly incased in mucus. His food lately has consisted of split beans, with wheat chaff and hay.

Treatment.—Ordered a strong aloetic draught to be given, with ʒiij each of Ol. Juniperi et Spt. Ammon. Arom. Bled until the pulse faltered (about ten pints were taken). Apply hot water to the abdomen, to be succeeded by a stimulating embrocation, and throw up an enema every hour.

At my evening visit, I found him much the same as when left in the morning; pulse 56, and it has regained its power. His favorite position is lying upon his back or side, with his feet firmly pressed against the wall or manger, but he does not roll as if in acute pain. He frequently stands for half an hour at a time, preferring a corner to press his quarters against. Repeat the bleeding, to the extent of eight pints; also the draught, *omitting* the aromatic spirit of ammonia.

June 4th.—There is a great change for the worse. The animal has been more restless during the night, and he is now continually pacing the stable; indeed all hopes of recovery are fled. He died about noon.

Post-mortem examination.—On opening the abdomen not the slightest trace of inflammation was to be discerned, not even a blush; but the diaphragm was found ruptured in its muscular portion, some six inches in extent; against which was lying, for it had hardly entered the thorax, a doubling of the small intestine. Upon further investigation, the stomach, small intestines, colon, and cæcum, were perceived to be all in a very healthy state. The ingesta was pultaceous, denoting that our medicine had done its duty. But at the anterior part of the rectum existed an obstruction, formed of hard fecal matter, double the size of an ordinary cricket ball. The gut appeared to have accommodated itself to this accumulation, which required great force to break it down, but it contained no nucleus.

I think there can be little doubt but that the animal first suffered from pains brought on by this impacting of the intestine, and that in some of his falls, or in rolling, he caused the phrenic hernia which was the immediate cause of death. Hence the desirability, if at all able, of keeping our patients on their legs, in these affections, as much as possible, and perhaps assisting them by hard friction over the belly. I have lately witnessed the death of a valuable young horse, from entanglement of the bowels, caused by rolling, when suffering from spasms produced by worms. That practised veterinarian would confer a boon on the profession who would well define the varied symptoms of abdominal diseases in the horse. At times they are often very perplexing. Last year I saw a case of perforated bowel. For some days no more urgent symptom was present than a continual uneasiness or fidgetiness; the entire absence of acute pain; but, as in all cases I have witnessed, a peculiar glossiness of the coat, and fetid breath. I must, however, "pull up," or you will think I have vanity enough to commence what I am asking others to do.

CASE 2.—RUPTURE OF THE DIAPHRAGM SUPERVENING AN ATTACK OF INDIGESTION.

Subject, a fine old chesnut horse, broken winded. In his early days, no doubt, he had been in much better hands than he was at the time of his death. He was the property of a party who frequented provincial fairs, with a vehicle in which were arranged numerous wooden horses, with which, for a small gratuity, he amused the juvenile equestrians. In this capacity the poor old horse had been engaged from the early morn of a long summer's day until dark; and business being unusually brisk, he had no time for his mid-day feed, but as a compensation he had a double allowance, consisting of half a peck of peas, placed before him at night. These he had no sooner finished than he felt uneasy, and commenced rolling about. His owner supposing it to be his old complaint, for he was often attacked with colic, gave him his usual "drops of comfort," ale, gin, and pepper; but this time even a second dose failed to give relief, therefore, about three o'clock in the morning, I was solicited to see the animal, which I did. It was one of those cases in which there needed no hesitation in at once pronouncing a verdict of hopeless. I shall not trouble your readers with the treatment resorted to by me, further than to state that such means were employed as the urgencies of the case suggested; and, as I did not see it until the symptoms were protracted, content myself by giving the marked ones present. The coat was saturated with perspiration, the pupils dilated, the breath very offensive, and the visible mucous membranes very pale. When up he was constantly on the move; but his favorite position was to lie on his back with his fore feet alternately beating his sternum, and so violently did he so, that we were obliged to fetter them. He died exactly twelve hours from the attack.

Post-mortem examination.—The stomach was in full possession of the last night's fatal supper, the peas; and several feet of the small intestines were found occupying the thorax. The muscular portion of diaphragm was very pale and thin. The lungs were emphysematous. I have already said he was broken-winded.

CASE 3.—RUPTURE OF THE DIAPHRAGM, PROBABLY LONG EXISTING.—CAUSE, OCCULT.

A carriage horse, ten years old, the property of a clergyman. The animal had experienced a very severe catarrhal

attack, with protracted suppuration of both sub-maxillary glands, by which he was greatly reduced; but, after some weeks' careful nursing and attendance, he seemingly rallied. Upon resuming his work, however, he proved to be a very bad roarer. Active and varied remedial measures were tried and persisted in for weeks without any benefit whatever resulting. For some weeks before his death he made much noise during respiration even when standing in his stall; but more so when he was down, and also during feeding, for his appetite was unimpaired. At times it was quite distressing to hear him, the noise amounting to a shriek. Auscultation convinced me that it proceeded from his thorax, and I suspected bronchial abscess. The noise increasing, and becoming even more distressing to listen to; the animal was removed to a distant paddock, with a warm out-house to run in, which he had not tenanted many days before he died.

Post-mortem examination.—There was a rupture of the diaphragm, about three inches long, just to the right of the œsophageal opening, the edges of which were thickened as if of some long time standing. Several feet of the small intestines were within the thorax, a portion of which, four inches long, was firmly adherent to the pleura, and they were strangulated. The right lung was absent, the pericardium full of fluid; but the other portions of the respiratory passages were free from disease, proving that the noise was caused by the presence of the hernia, which I think must have existed for some time.

CASE 4.—PHRENIC HERNIA ACCOMPANIED WITH EFFUSION.

An aged Suffolk mare, with a foal at her feet, was grazing on the farm of the late Duke of Manchester, when she was observed suddenly to suspend feeding, and commence rolling. Her abdomen, to use a hacknied phrase, was as tight as a drum-head. I was at her side in less than half an hour from the commencement of the attack; but only in time to superintend and report an instructive—

Post-mortem examination.—Upon opening the abdomen a large quantity of fluid escaped. On approaching the diaphragm, we found an extensive lesion on the left side, through which several feet of the intestines had found their way, these lying immersed in several quarts of the same liquor as that met with in the abdomen. The mare was a good mother, and never had any previous illness.

Remarks.—I commenced by stating that the cases I have thus recorded contained nothing new; but perhaps they may

be so far interesting as showing under what different forms important parts are affected, and to what an extent disease may sometimes exist without any outward signs being manifested.

AN ACCOUNT OF FOUR HORSES POISONED BY ARSENIOUS ACID.

By EDWIN TAYLOR, M.R.C.V.S., Bury St. Edmunds.

Friday, April 25th, 1856.—I was requested to attend two horses, reported to be very ill, at Mrs. Mitchell's, of Culford. When I arrived, I was informed that a brown horse, which was taken ill on the Thursday night, with symptoms exactly the same as the two I went to see were, and which had been attended by a farrier from Thetford, had died on the Friday morning at 3 o'clock. My patients were a brown mare and a chestnut horse. *Symptoms.*—Great prostration; violent twitching of the muscles all over the frame; constant abdominal pain; sometimes lying down and rolling about; purging violently, about every ten minutes, the dejections being dark-coloured and very offensive; the mucous membrane of the eyes and nose was of a bright scarlet colour; the pulse in each horse ranged from ninety-four to ninety-six beats in the minute. The owner having asked me my opinion of the cases, I at once gave no hope of recovery in either case; and told young Mr. Mitchell that, from cases I had before seen, I believed both the horses to be poisoned with arsenic.

The man that attended the other horse said that he died from a severe cold and superpurgation. I then proceeded to make a post-mortem examination of the dead horse. I found the stomach was highly inflamed, the mucous membrane had peeled off in places, and formed a coating to the contents. The cœcum and colon were also highly inflamed, and black in places. The lungs were much congested. I took the stomach and contents home for analysis. From these appearances I felt more than ever convinced of the cause of death. I therefore proceeded to administer the requisite medicines to the other two horses that were still suffering. To each I gave a quantity of whiting, scraped from the lump, as that happened to be at hand, the whites of four eggs, and one ounce each of Tinct. Opii et Sp. Ether. Nit. This was repeated every four hours. I stayed there nearly all the day, until the other horses came home from work, as

Mr. Mitchell thought, from what he had seen of one of the mares when at work, that she was affected in a similar way. Upon examining her I found the symptoms were exactly the same as in the other two, with this difference, from her having been at work, some of them were more aggravated. She was removed into a box by herself, and treated in the same way. I then left for the night, promising to attend early in the morning. I took the stomach to Mr. Image, a surgeon in this town, who kindly analysed it for me, and he detected large quantities of arsenic.

From this fact being ascertained, two of the horse-keepers who had the charge of these horses were taken into custody. Three of the horses belonged to one stable, and the fourth came from another.

Saturday, April 26th.—I found that the chestnut horse had died this morning, and the brown mare was dying fast. I immediately made a post-mortem examination of the chestnut horse, when the same appearances presented themselves as in the brown horse examined the day before. The brown mare died about 12 o'clock. The bay mare, which was the one that came home from work on the Friday, was suffering acutely, which she continued to do until Sunday night, when she also died. The two men were brought before the county magistrates, and from the evidence then given were committed to take their trial at the next Ipswich assizes.

July 28th.—The men were put upon their trial at Ipswich, and the witnesses for the prosecution examined, when the judge dismissed the case, as he said there was no evidence against the prisoners to prove the administration of arsenic by them, or of malice either.

I may be permitted to state, that Mr. Mitchell had, a few days before the occurrence of the death of the horses, ordered home a large cask containing arsenic and soft soap, in a liquid form, for the purpose of dressing his sheep, but to this the men had no means of access fairly.

Your's, &c.

We annex an account of the trial, as given in the *Suffolk Chronicle*.

“HORSE POISONING AT CULFORD.

“*William Petch*, 24, and *William Murton*, 28, were charged with having administered poison to four horses, which died therefrom, the property of their employer, Mrs. Elizabeth Mitchell, at Culford.

“Mr. Orridge was counsel for the prosecution: Mr. Metcalfe defended the prisoners.

“The case against Petch was first investigated.

“The facts will be tolerably fresh in the recollection of our readers, as a full report of the proceedings before the committing magistrates appeared in our columns at the time. It will suffice here to give an outline of the case. The prisoner was horsekeeper in the service of the prosecutrix, a widow lady, carrying on the business of a farmer at Culford, and it was stated that he had been employed upon the same farm nearly all his life. On the 24th of April, young Mr. Mitchell had his attention called to the circumstance of some of the horses being ill, and among them was a valuable gelding named Punch, worth about £40. In the course of the night this horse died, and the nature of its illness as well as that of the others being fraught with suspicion, Petch was asked by Ellis, the farm bailiff, whether he had given them anything. The reply made was that he had given them nothing but what he had received from Ellis, whose duty it was to give out the corn. A farrier was sent for to attend to the surviving horses; and Mr. Taylor, veterinary surgeon, of Bury, was called in to make a post-mortem examination of the dead horse Punch. He was satisfied, from the inflamed state of the stomach and other appearances, that a deadly mineral poison had been administered. To make sure that this opinion was not without foundation, the intestines were next forwarded to Dr. Sweeting, assistant to Mr. Image, of Bury, as well as the remaining corn and chaff left unconsumed in the manger. In both instances a quantity of arsenic was discovered, but no deleterious substance was found in the corn-bin, from which it was inferred by the prosecution that the poison was mixed with the food put into the manger. The three other horses died shortly afterwards in great agony, and there was no doubt whatever that death in every case resulted from the same cause.

“As facts favorable to the prisoner, it was elicited that the horsekeepers took great pride in the condition and appearance of their horses, that the chaff mixed with the corn was cut and kept in an outhouse accessible to all the servants on the farm, and that the prisoner Petch was the first who gave information to Mr. Mitchell respecting the illness of Punch, that, in fact, he led it up to the house for his young master to look at. It was further elicited, that it was not unusual to give small doses of arsenic for the purpose of improving the coat.

“The Judge asked Mr. Orridge if he had any further evidence?

"*Mr. Orridge.*—No, my Lord.

"*The Judge.*—This is a case in which the charge of malice must be clearly established.

"*Mr. Orridge.*—It is a question entirely for the jury whether—

"*The Judge.*—It is a question for the judge to say whether there is reasonable evidence to go to the jury.

"*Mr. Orridge.*—I have no further evidence.

"*The Judge.*—It is a most serious offence, and if maliciously done it ought to receive condign punishment; but I really do not think there is any such evidence as would at all justify the jury in finding the prisoner guilty. Here is Petch, who has lived all his life upon the farm, and his employers are perfectly satisfied with the manner in which he and the other servants have treated the horses. There is not a tittle of evidence to show that he administered arsenic to this horse, or that he had any spite against his mistress or any of the family, or against any of the horses. Therefore, I shall say, that upon this evidence the jury ought to find a verdict of not guilty.

"As it appeared there was no stronger evidence against Murton, both prisoners were discharged.

"*The Judge.*—I do deplore the facilities which exist in this country for the sale of poison. There is a law against the sale of arsenic, and I hope before another session of Parliament passes away, that precautions will be adopted by the legislature, to prevent the sale of all poisons, in such a manner that they may never be misapplied. I am informed that rat-catchers go about the country selling arsenic. If any such persons are brought before me I shall take care to punish them with the utmost severity. It is a scandalous breach of an Act of Parliament, and it ought to be publicly denounced and reprobated. It affords a facility to apply arsenic to improper purposes, and a facility for poisoning mankind, and gratifying all the malignant passions in the human heart. If these men have, for any purpose, however innocent, without the knowledge of their mistress, used poison to improve the appearance of their horses, I hope they will be careful not to do so in future. As they seem to have conducted themselves properly, I would strongly advise that they be forgiven and taken into service again.

"*Mr. Mitchell* said he did not care taking Petch back, but he would not take the other.

"*The Judge.*—Well, I must leave that to you.

"The Court then adjourned."

SEXTUPLE FRACTURE OF THE OSSA INNOMINATA OF A HORSE.

By R. H. W. HOLLOWAY, M.R.C.V.S., V.S., 2d Light
Dragoons, Madras.

GENTLEMEN,—I send you, by this mail, a photographic illustration on glass, taken by Lieutenant Hodgson, of the 2d Light Cavalry, of the following case of fractures of the pelvis.

The subject was a remount horse of the present year, selected at the Depôt Oosoor, as a charger for the officer commanding this regiment.

The following is the substance of what I was enabled to collect from the salistry (native practitioner) in charge of the remount horses. They left the stud on the 20th December last. During the halt at Cæra, a place distant from Oosoor ninety miles and five furlongs, the horse in question, young, fresh, and in high condition, became suddenly excited and turbulent at his picket, the result of which was a violent fall upon his near haunch, upon the peg to which he was attached. It soon became manifest, the horse being unable to rise, that a severe shock had been imparted by the concussion. Fomentations were, as soon as possible, actively employed, and persisted in.

On the following morning, with some assistance, the horse got up. *Very considerable* effusion and tumefaction of the injured parts had supervened, but although the lameness was severe, he was enabled to resume the march.

The next day there was such an augmentation and aggravation of the abnormal symptoms, that the poor animal was not able to move at the appointed time; he was, therefore, left behind, with instructions for his general management.

At the next stage there was a halt of one *clear* day, upon the morning of which he came up to the encampment, having been enabled, after simple fomentation, to march slowly on. Here a charge was applied, subsequently to which the tumefaction *gradually* subsided, the suffering became less acute, and the lameness somewhat less apparent. After the charge was spread, the horse regularly performed his daily marches, of from ten to fifteen miles, with the other remounts, only halting when they did, although occasionally he arrived rather later.

Beyond the fomentations and charge, with the exception

of an occasional febrifuge, no treatment whatever was instituted, and no constitutional disturbance of any moment was manifested throughout. On the 1st of March last, the whole batch of horses arrived at Julnah, a distance from Cæra (where the accident occurred) of 444 miles and $1\frac{1}{4}$ furlong. I was then absent from my corps on division leave, but a few days afterwards returned to cantonment.

I found the subject of this case *very much* emaciated, and there was a general atrophied condition of all the muscles of the hind quarters and extremities. The injuries sustained were evidently plural, complicated, and severe. The powers of progression were very limited.

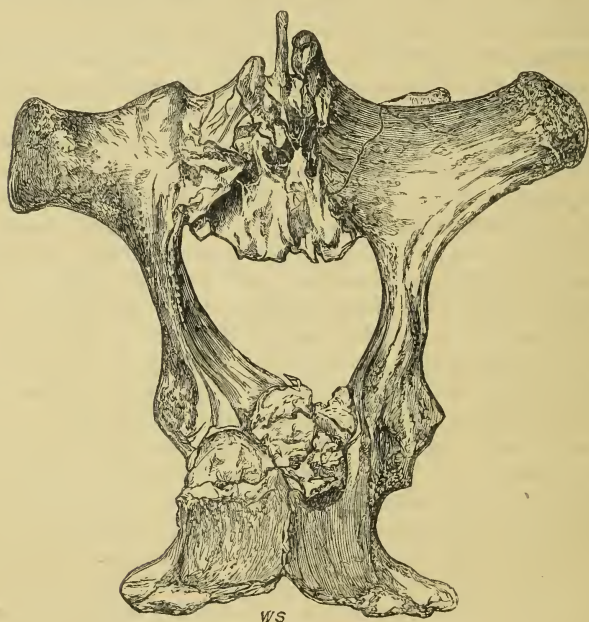
The action, if such a term could be correctly applied to the hopping gait of this animal, was exceedingly faulty, abnormal, and grotesque. Having made a careful examination, my prognosis was decidedly unfavorable. I communicated the same to the commanding officer, and recommended that the animal should be destroyed. A committee was accordingly assembled, and the horse subsequently shot. The pelvis was then denuded, when the following appearances presented themselves.

There had been a transverse fracture of the left dorsum ilii. Fracture of the symphysis pubis. Two distinct fractures, one on either side of the symphysis, immediately anterior to the notch in the acetabulum, and including the anterior boundary of the obturator foramen. The tuberosity of the ischium, on the left side, was also fractured, and there was likewise a fracture of the body of the ischium on the same side, situated just posteriorly to the foramen ovale. These fractures had all been *complete*, but a vigorous formation of callus had succeeded, together with a superabundant exterior osseous deposit. It will be apparent that one side of the innominata was entirely severed from the other. Had not such excessive interstitial deposition and tumefaction of the parts supervened, the result of such serious and complicated injuries must, I should imagine, have been similar to those recorded in your Journal for February last, by Mr. Western. Singular, however, to say, in the present instance, although this long march was almost immediately and continuously prosecuted after the accident, not the slightest injury appeared to have been inflicted upon the pelvic viscera. The near hind quarter, from all three bones being broken, was longer than the opposite one; a depression was also during lifetime observable of the left antero-superior iliac spine, and there was a peculiar transverse ridge upon the left dorsum ilii, from all of which I was led to diagnose that there had been fracture with displacement.

Remarks.—I think you will agree with me, that the representation I forward herewith, of the fractured pelvis (and sacrum, with the last lumbar vertebra, *in situ*), pretty clearly demonstrates the severity and intricacy of the injuries sustained, and that, with the exception of the “two distinct fractures, one on either side of the symphysis,” the fractures are satisfactorily delineated. It is, I think, rather an interesting specimen of this style of photography. You will perceive that the bones are connected by ligatures and wires, for although (as I have already observed) perfect callus had formed, the bones, after death, became by accident separated.

I remain, Gentlemen, yours faithfully.

JAULNAH; May 23, 1856.



OBLIQUE AND COMMUNED FRACTURE OF THE INFERIOR MAXILLA, FOLLOWED BY SYMPATHETIC FEVER AND DEATH.

By the Same.

GENTLEMEN,—Last month I sent you, with a fac-simile, a case of fractured pelvis, notwithstanding the complexity and severity of which, the sufferer was enabled, with scarcely an

untoward constitutional symptom, to perform a journey of upwards of 444 miles.

As things are more strikingly displayed when placed in juxtaposition, I am induced to trouble you with the following instance, which occurred in my practice in April last, of fracture of the lower jaw.

A troop horse of the Artillery was reported on the morning of the 16th of that month, as having received a "kick on the head from another horse." When my attention was directed to the patient some effusion, but not much, about the lower jaw generally existed, and tumefaction of the submaxillary, sublingual, and parotid glands had supervened. No displacement could be detected, nor crepitation elicited; but the horse was so extremely jealous and impatient of being handled, or even approached, that the examination was conducted under somewhat unfavorable circumstances.

I prescribed a full dose of cathartic medicine, ordered constant fomentation and enemata, and enjoined perfect quietude.

With the exception of the bowels not responding to the physic, all went on satisfactorily until the evening of the 18th of April, when sympathetic fever set in, which, with extreme constitutional irritation, in spite of every counter-effort, was fatal in forty-eight hours.

The post-mortem examination disclosed an extensive oblique fracture of the right side of the inferior maxilla, which had its origin posteriorly, a little anterior to the coronoid process, and immediately below the zygomatic arch; its termination being at the junction of the side and neck of the bone, at the superior border, just above the anterior maxillary foramen. Its course was obliquely downwards and forwards to the posteriormost molar tooth, along the fangs of all the grinders, from whence it inclined upwards to reach the situation in the neck already described. At the root of the fourth molar tooth, where the blow had been inflicted, the bone was splintered into several small spiculæ, without, however, any displacement whatever.

Not the slightest effort on the part of nature had, apparently, been made to reunite the bone, although there was some additional vascularity about the periosteum.

The horse, subsequently to the injury, was only able to move his jaw in a horizontal direction; he was, therefore, entirely supported from that period by gruel and other liquids.

Remarks.—These two cases are, to my mind, examples (in addition to the many that might be adduced) of the particular diatheses in different subjects.

For instance, in one constitution we see a peculiar aptitude,

if I may be allowed the expression (even should the injury be extensive and the circumstances trying), to repair the breach. The accident will speedily be followed by a healthy inflammation; callus, should it be the solution of continuity in a bone, will form, and throughout the *vis medicatrix naturæ* will exert (apparently unopposed) its salutary influence, and proceed secretly, silently, but no less surely, to accomplish the desired end. In another, no such appetency or disposition will obtain, no healthy local phlegmon will succeed, but sympathetic fever, accompanied with excessive nervous irritability, will supervene, and death more or less rapidly close the scene.

INTERNAL HEMORRHOIDS AFFECTING A PONY.

By the Same.

ON the 30th of March last, a small white pony, the property of Major Strange, Commanding 2d Light Cavalry, was admitted into the infirmary with fever. He was recovering from the effects of the attack, although there was some torpor of the bowels and liver, with a capricious appetite, when, on the night of the 12th April, he ate all his bedding. When I saw him on the following morning as usual, he was going on satisfactorily. In the course of the afternoon, I was informed by the farrier-major that the pony was suffering very much from constipation, and that, after a clyster of warm water, he had "passed a little dung mixed with blood." Under these circumstances, I immediately attended.

Symptoms.—The pony was standing with his back roached, grunting and straining violently, and making every possible effort to relieve his bowels. This was attended with considerable flatus, but with no evacuation of *fæces*. From the stained and bespattered appearance of his thighs and legs, it was evident that there had been a copious hemorrhage, and a large coagulum was impending from the anus. Upon a careful manual examination, several tumours, each about the size of a common hazel nut, were found around the rectum, about two inches from the anal opening.

They were situated principally on the left side. The mucous lining membrane, covering the piles, imparted extreme heat to the fingers, and felt hypertrophied, corrugated, and knotted; and when the hand was withdrawn, it was, by reason of the excessive straining which succeeded, easily discerned.

It had a frilled appearance, and the tumours were highly

vascular. Neither upon pressure, however, nor during defecation, did there appear to be much, if any, pain. Sometimes, after these violent efforts, a few small, hard dung balls would be evacuated, at times slightly coated with mucus, and generally, but not invariably, tinged with sanguineous fluid. Upon two separate occasions a considerable flow of blood occurred. This proceeded, I have no doubt, from the piles themselves, and not from varicose veins; for the blood was arterial in character, and was squirted from the anus. Two or three of the piles were retained, each only by a very slight pedicle, and were easily disengaged by the fingers.

One of them, of a pale brownish-pink hue, I examined, and found a well-marked seam or cicatrix of a florid colour, where the tumour, during the straining and pressure, no doubt, had burst, and produced the copious discharge of blood on one of the two occasions already noticed; nature attempting, by this means, her own relief.

The chief and almost sole source of annoyance appeared to be the mechanical obstruction to the passage of the fæces, no *constitutional* disturbance scarcely being present.

Treatment.—This consisted in the application of two dozen leeches around the anus. The region of the liver was blistered, and cold-water enemas were constantly employed. Twice daily, viz., morning and evening, an opiate suppository was introduced. The suppositories were continued for nine consecutive days, with the cold-water clysters in the mornings and evenings before their introduction, and once at mid-day; when only *one small* tumour, and that very much flattened and reduced, remained. A few days afterwards this likewise had disappeared. A few alteratives were also exhibited, commencing on the fourth day from the application of the leeches. On the day following the use of the opium paste, the lining membrane was less vascular, and the piles became every day less in bulk, and softer, until they vanished. The bowels were likewise on the same day opened, without any concomitant straining, eight times freely, and continued to be so subsequently, acting several times both night and day. The appetite also became very speedily quite healthy.

The *diet* consisted simply of green grass, lucerne, and cold water. Bran mashes the animal always refused.

The above is the first case of hemorrhoids that I have met with in the equine species, and as I believe them either to be of rare occurrence, or but seldom noticed, I have therefore transcribed it for your disposal from my case-book.

I remain, gentlemen, very faithfully yours.

JAULNAH; June 21, 1856.

RUPTURE OF THE RECTUM OF A HORSE. RECOVERY.

By E. MELLETT, M.R.C.V.S., Henley-on-Thames.

ON the 31st of March last I was requested to see a cart-horse, the property of the Right Hon. Lord Camoys. The history that I received about him was that he had worked very hard on the Saturday, and fed very ravenously afterwards; but had been unable to pass any dung since the previous morning. On examination I found the pulse and breathing but slightly increased, yet the countenance was very anxious, and he was continually straining so as to evacuate his bowels. Thinking it a case of simple functional derangement, I gave a draught of oil and solution of aloes, and ordered enemas to be thrown up every two or three hours. This treatment was persevered in for the first three days, when the fæcal matter having become pultaceous, and the horse still being unable to relieve himself, I examined him *per rectum*, when I found a rupture to exist in the gut about an inch and a half in length, extending from the sphincter ani forwards, and situated on the superior part. On discovering this, I ordered a clyster to be administered every hour, a sufficient quantity of the acetum cantharidis to be applied over the ruptured part, and an aperient to be given occasionally. The diet to consist of bran mash with sliced carrots. This treatment was continued for a fortnight, after which time the horse was enabled to relieve himself without assistance. The horse was now turned into a grass field for a week, after which time he was put to regular work, and has continued perfectly well ever since.

POISONING OF PIGS WITH BRINE.

By G. LEWIS, V.S., Monmouth.

A FARMER, nine miles distant from this town, sent, requesting my attendance immediately. Upon my arrival, I was informed that two lots of pigs, in separate compartments—a sow and eleven young ones in one compartment, and four large pigs in another—were fed that morning (Monday) with food prepared the day previous in a clean iron boiler, in which had been cooked the family dinner on the Sunday. The food for

the pigs consisted of young turnips, bran, pea and bean pods. The pigs had all fed off the same food, a portion of which was then remaining in a tub in the out-house, and in a short time after (within half an hour) one of the large pigs was perceived to be ill, reeling about the sty, its nose and ears very white and pendulous, and its head hanging down. One pig had vomited. In a quarter of an hour afterwards this pig was found dead. Upon this the other compartment was visited, where we found the sow dead, with six of the young pigs around her, and the remaining five very ill, suffering from symptoms similar to those observed in the large pig that died. These were made to drink butter-milk, and they recovered.

I proceeded to make a post-mortem examination of one of the small pigs, which presented the under-mentioned appearances: Lungs healthy, but rather of a blanched appearance, even for so young an animal; the large blood-vessels were extremely congested; the left ventricle of the heart empty; the right ventricle filled, and also both auricles, with black, uncoagulated blood; the investing membrane of the stomach intensely inflamed; the internal mucous membrane in places detached; the whole of the villous portion highly inflamed, presenting a dark red colour in some places, in others a lighter tint. There was the appearance of erosion on several parts, of the size of a sixpence.

The pigs had not been fed for twelve hours previously, and none of the food given in the morning had passed the pylorus. There was nothing found in the small intestines but the natural secretions, and they appeared healthy. The vessels of the peritoneum were congested. These were the general appearances presented by several I then examined.

It being resolved to forward the stomachs, with their contents, to Mr. Herapath, of Bristol, for analysis, I, in accordance with the wishes of the owner, took them to Mr. Herapath, and described what I had found, &c.

The post has just arrived with a letter from Mr. Herapath, enclosing an hermetically sealed tube, containing a powder, which, with a copy of the letter, I will forward to you by the next post.

Believe me, &c.

(Copy.)

BRISTOL; *Aug.* 13, 1856.

Sir,—The pigs you brought me portions of have died from an excess of common salt given to them. Every pint measure

of the fluid taken from the stomach of the large animal contains forty-two grains of salt, and, as a proof, I send you that extracted from two ounces. There is no other substance present that can be detected; certainly no metal or mineral agent. I think it is very likely that a servant may have thrown brine into the pigs' food, not thinking it injurious. The mucous surface of the larger stomach, in the dependent portion, was covered with inflammatory specks, as if grains of an irritant had lain on it.

I am, sir,

Yours respectfully,

WILLIAM HERAPATH.

Mr. GEO. LEWIS, V.S., Monmouth.

MONMOUTH; *Aug.* 15, 1856.

Dear Sir,—I was astonished to read in Mr. Herapath's letter that so small a quantity of common salt will destroy life in the pig, and in so short a time too, acting so violently as to produce all the symptoms described in my last letter to you. Now, if the stomach of the large pig, analysed by Mr. Herapath, contained eight quarts, the quantity of common salt held in solution would be 3j, 3iij, gr. xij.

And if we are to be told that less than one ounce and a half of common salt is one of the most destructive and irritant poisons to the largest-sized pig, farmers' stock is no longer safe, for salt is to the pig more deadly than nux vomica, and, being more easily obtained, ere long we must expect a complete depopulation of pigs, and the lovers of home-cured bacon must forego their favorite slices, for they will be as dear as rubies!

Yesterday evening I rode over to Mr. Constant's to state the information I had received, and to ascertain further particulars, when I was informed that on Sunday a small piece of beef, from 3 lb. to 4 lb. weight, which had been salted twice, but not been in brine nor tasting at all salt, was boiled in the water, to which more water was added, in which the food that proved so destructive to the pigs was afterwards boiled. But, added my informant, I am certain it never injured them, neither had we any brine which could have been thrown into the boiler, neither do I believe that brine would have proved so deadly a poison, for frequently we have thrown into the hog-tub a large quantity of strong pickle made of bay salt, saltpetre, &c., &c., in which a round of beef has lain for from six to eight weeks. Moreover, we always make it a rule to cast into the hog-tub all the refuse salt when curing

bacon, this being generally 6 lb. or more: yet we never knew of a pig suffering any ill effects from it.

I would not have it for a moment imagined that I am attempting to disparage the talents of Mr. Herapath, when I assert my impression that it is his lack of knowledge of veterinary science which is the cause of his making the assertion he has.

But that these matters should be thoroughly investigated and properly understood by all, no one, I think, will attempt to deny. To whom, then, are we to look for this? How are we to know whether we are to consider common salt is a most deadly poison to pigs, even in small doses? Why, sir, the question furnishes its own answer,—TO THE HEADS of the VETERINARY PROFESSION; and the public finger, in this instance, points to *you*. Acting under this conviction, I have had another of the pigs exhumed, which I have forwarded to you this day.

I am, yours, &c.

To Professor MORTON.

[We cannot refrain from commending Mr. Lewis for the interest he has taken in this matter, and thanking him for his communications. Nevertheless, we think Mr. Herapath has stated that which is perfectly correct, that common salt has been the poisoning agent; although there may be something in the conjecture of the German veterinary surgeons, that there is also present in the brine a fatty acid, engendered by heat. So many instances of unexpected death from this substance have come under our notice, that we are compelled to believe it to be poisonous under certain circumstances, strange and inexplicable as it may seem to be. In corroboration of this we need only refer to some of our late numbers, and especially to the communication by Mr. Lepper. The pig forwarded by Mr. Lewis arrived in such a state of decomposition from the heat of the weather, that it was impossible to observe any changes that may have taken place in the viscera.

We have also to thank Mr. Lewis for some calculi taken from a dog. They are evidently phosphatic in their nature—the neutral or ammonio-magnesian phosphate. We concur with him that the best mode of treatment to be adopted will consist in the exhibition of acids. He will, however, remember that this peculiar diathesis is often coexistent with, and sometimes dependent on, a peculiar state of the digestive organs; therefore these will have to be attended to. Or it may be that these concretions simply arise from disease of the mucous membrane of the bladder, or some of the urinary

passages. In either case, a course of acids, by giving tone to the system, it may be anticipated, will be productive of good. Should there, however, be any spinal lesion, whence also may arise phosphatic urine, then the utility of acids may be questioned, as they will merely dissolve the phosphates without removing the cause of their deposition. All this Mr. Lewis will inquire into, and perhaps he will favour us with the result.]

Contemporary Progress of Veterinary Science and Art.

By JOHN GANGE, M.R.C.V.S.,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 453.)

RUPTURE OF THE LIVER.—On the 16th day of June, 1855, a light-harness mare, eight years old, was admitted into the Lyons School, having been visited the day before as an out-door patient for a slight cough, symptoms of which had existed for a fortnight. The cause of her being brought to the infirmary was that, on being driven from St. Priest to Lyons, she gave evidence of great fatigue, so as to render it almost impossible to continue the journey. On being admitted into the college, at half-past eleven a.m., the symptoms were prostration, eyes fixed, awkward gait, the whole body cold and the loins rigid, the pulse 90 per minute, soft and small in character; respiration accelerated, and the flanks' movements jerking and abrupt, the visible mucous membranes pale, no abnormal sounds heard on auscultation; the digestive system appeared undisturbed, and the animal was in remarkably good condition. The diagnosis was doubtful; prognosis unfavorable; and the treatment at the time consisted in an electuary containing digitalis. The mare was warmly clothed.

Shortly after being placed in a stall, she pulled on her halter and remained motionless for an hour; twitching of the facial muscles supervened and cold sweats bedewed the body, continued tremor of the haunch and neck was observed, pulse feeble and 110 per minute, heart's action quick and strong. In from one to two hours stupor and relaxation of the muscles occurred, the lips hung loosely down, and the upper lid dropped over the eye. She died at a quarter-past two p.m., having fallen twice and suffered from convulsive

movements of the limbs, with dilated pupils, and the beats of the heart becoming gradually more and more imperceptible till they altogether ceased.

Post-mortem examination, fifteen hours after death.—The abdomen contains almost four gallons of clotted blood, the intestines are pale, and the mesenteric veins empty.

On exposing the liver, the posterior part of the right lobe is found presenting a violet colour, and is enlarged. On the anterior surface of the same lobe, transversely from one border to the other, is a slit in Glisson's capsule, and within the slit are dark blood-clots adhering to the hepatic structure. On the inferior portion of the right, and in the middle lobe, the blood-clots are situated between the capsule and gland substance.—*Journ. de Méd. Vét. de Lyon*, June and July, 1855.

In a note appended to the above case it is said that ruptures of the liver are rare, the one just related being the only one observed in the School of Lyons during fifteen years; that veterinary journals contain few records of such instances—Hurtrel d'Arboval has collected them, and enumerates five; that there is no pathognomonic sign of the affection; and lastly, that the diagnosis during life can only go so far as determining the existence of internal hemorrhage without indicating its exact seat.

Percivall, in his 'Hippopathology,' speaks of two conditions in which the liver may be ruptured. "A state of congestion, gorged with blood; and a pale, clay-coloured, softened, disorganized, fragile condition of it."

An essay on hemorrhage of the liver is published in the 'Veterinary Records' of the late John Field, under the title of Hepatirrhœa; it is, says Field, invariably the result of structural disorganization, which is only recognised after "passive hemorrhage," the effect of the destruction of the parenchyma, and the rupture or relaxation of the vessels.

This organic disease of the liver is looked upon by Mr. Field as peculiar to the horse, but D'Arboval mentions a case observed by Dupuy in the dog.

As the result of an idiopathic disease of the liver, hemorrhage from this organ occurs mostly in the horse, and Mr. Field looks for an explanation to this fact in the quantity of labour the horse has to perform, and the rapidity with which he does it.

The term *Hepatirrhœa*, or, according to Kraus, *Hepatorrhœa*, that has been adopted by Mr. Field, is an improper one, for the disease in question, as used in the same sense as *fluxus hepaticus*, by pathologists, to indicate the copious ejection of almost pure bile during defecation. True hepatirrhœa de-

pend on the existence of an abscess in the liver, which empties its contents through a fistula into the intestines; the bile, mixed with pus and blood, is thus evacuated in quantities with the fæces.

I remember an instructive case of rupture of the liver that occurred in my father's practice, in the year 1848; it is recorded in one of my brother's note-books.

The patient was an aged chestnut pony, to which my father was called on the morning of Sunday, the 14th of May; he presented symptoms of colic, for which he was successfully treated. The only strange occurrence at this time was straining after evacuation of the fæces, with protrusion of the mucous membrane of the rectum, which looked peculiarly white, like a gut that has been macerated in cold water for twenty-four hours; the pony got over this attack, but on the 1st of June a relapse occurred.

In my father's notes of the case, I find the following: "On arrival, the symptoms were most unfavorable; pulse weak, breathing frequent, extremities cold, visible mucous membranes pale and yellowish. I had, from the last attack, thought this case an unusual one, and suspected derangement of the liver; however, I again administered a mild aperient ball, and proceeded to try the effect of the abstraction of a little blood: the vein was difficult to rise, and though I made a large opening into it with the fleam, could obtain no flow of blood, beyond a small stream, which trickled down the sides of the pail; not more than two ounces could have been taken, before the pony became oppressed in his breathing. I stopped, and placed my finger over the orifice; the symptoms subsided, and, as soon as the blood was allowed to trickle again, the same formidable signs came on; the aperture was instantly pinned. On feeling over his body, I found the perspiration was breaking out, especially about his flanks. I was then of opinion that an internal hemorrhage was going on, and my prognosis was most unfavorable; twitching of the muscles came on, the pony reeled and fell, struggled for some twenty minutes, and died." I was with my father when the pony was opened; much clotted blood was found in the abdomen; the liver was found much enlarged, nearly black, and its capsule had a rent in it six inches long, from which the blood had escaped. In some parts the liver was found pale and bloodless, or of a greenish hue, owing to the presence of bile; the whole of the hepatic structure was, however, soft and friable.

There are two forms of liver-softening known to us. The first is simple disintegration, when the liver breaks and

crumbles with the slightest force; the second is fatty degeneration. It is the first of these that is frequently associated with congestion—the vessels give way, and hemorrhage is the result; those portions of the organ where the blood-vessels remain intact have the clay colour and brittle consistence. The different appearances of the liver in different cases, and in different parts of the same organ, are to be attributed chiefly to accidental hemorrhage.

True rupture of the liver, which may occur in the healthy state, as the result of violence, must be distinguished here from effusions of blood, owing to the vessels becoming implicated during the progressive disintegration of the hepatic textures. The post-mortem signs are characteristic in either case. In the first, the healthy organ appears sliced; in the second, the tissues are friable and broken down, and there is abundant evidence of old-standing disease. Viewed both as a question of pathology and veterinary jurisprudence, this distinction is important, and it cannot be said, with Mr. John Field, that hemorrhage from the liver is *only the result of structural disorganization*. The case observed by Mr. Millot, that is referred to by Mr. Percivall, at once proves this, for the rupture of the liver was caused by the animal having been kicked by other horses; and it is very clear the organ might be injured like any other, by simple violence.

PUNCTURE OF THE LARGE INTESTINE IN FLATULENT COLIC IN THE HORSE.—In the *Journal of Lyons* for February and August of last year, reports of four cases of tympanitis, successfully treated by puncture, have been transcribed from the clinical note-books of the school.

The four occurred within six months, and Rey says these are facts, which, added to others published, leave no doubt as to the good result of this operation. M. Isnard also publishes two cases; and one is a very striking one, from the menacing symptoms that were instantaneously relieved by the operation. The three instances that are recorded in the August number of the *Lyons Journal*, and which were observed in the Veterinary College, show that the animals were not completely restored until fæces and flatus abundantly escaped per rectum, after the exhibition of a purgative; the puncture of the intestine, however, was at all times attended with such an alleviation of urgent symptoms, as did not follow the use of clysters; but it is to be remarked that the purgative was generally administered after the performance of enterocentesis.

Rey and Lafosse have made numerous experiments to prove

that it is not dangerous to puncture the intestine. It is a very simple operation, and whenever it has been followed by fatal results, Rey says that death was to be attributed to the condition of the intestine.

Isnard relates a case that is in support of Rey's views. There is no doubt that the operation is an excessively simple one, and our readers will remember that in the number of the *Veterinarian* for December, 1855, we adduced facts, and brought to bear the weight of authoritative opinion to prove that simple penetrating wounds of the abdomen, without protrusion of the intestine, or penetration of air into the cavity, were almost unattended with danger. The simplest form of punctured abdominal wound in the horse, is that produced by a sharp trocar, that is made to enter the large intestine where it is most easy of access, that is, in the right flank, or towards the linea alba.

It is a question whether the exhibition of alkalies, or an aloetic purge, will not at all times supersede the use of the trocar. In bad cases of wind colic there may be great and immediate danger, and I should not hesitate to make an outlet for the escape of gas.

The operation was first adopted in France by Chabert,* then by Barrier,† Herouard,‡ Garcin,§ and others. In Germany, Hayne,|| Eckel, Bleiweis, Rychner, Pinel and Gyger have spoken of it in the most recommendatory manner, from the results witnessed after its performance. Brogniez¶ applied his ingenuity to the devising an enterotome, and suggested the direct introduction of medicinal agents into the intestine.

The terms *enterotomy* and *enterotome* have been used to designate respectively the operation and the instrument that Brogniez invented. We prefer *enterocentesis* (Strauss) to *enterotomy*, as the latter expression is applied, in human surgery, to Dupuytren's method of inducing sloughing of the spur-like process of an artificial anus, so as to remove the impediment to the radical cure of the latter. Dieterichs calls the operation *punctio coli*, as it is invariably the colon that is opened in the horse.

As it is the right flank that is punctured, the horse had best be standing, and the trocar to be employed should be four or five inches long, but the canula should not exceed

* 'Cours pratique des Maladies des Animaux,' 13ème question de l'Hydropisie.

† 'Instructions et Observat. Vétér.,' tom. v, p. 308, Paris, 1813.

‡ Ibid., p. 323.

§ 'Recueil de Méd. Vét.,' 1837, p. 72.

|| 'Practisches Heilverfahren, &c.,' Wien, 1840, p. 260.

¶ 'Journal Vétérinaire et Agricole Belgique,' 1843.

three lines in diameter. It is necessary that the stilet be very sharp, and thus made at once to traverse the parietes of the abdomen and intestine. On removing the canula the outer orifice is pinned, and some suggest that, more effectually to prevent the entrance of air into the belly, clay, or some pasty mixture, should be applied over the wound; this is so small that no apprehension as to consequences need exist.

ECTOPIA CORDIS.—In the third number of the *Repertorium der Thierheilkunde* for 1855, Hering gives the history and description of a new case of abnormal position of the heart as the result of defective or anomalous development. In the same journal for 1849, is the first instance studied by Hering; and in the volume for 1852, Leimer, a veterinary surgeon, published another.

Alessandrini, of Bologna, wrote an elaborate essay, in 1830, under the title *Descrizione di un Vitello Mostruoso*, in which the anatomy of a case of ectopia cordis is fully described. The venerable professor presented me with this, as with many other of his valuable memoirs, whilst I was studying the specimens in the Museum of the Pontifical University, and I am therefore enabled to give a sketch of a case of ectopia that is not generally known to teratologists; at least I have not, as yet, seen it quoted.

A cow, that had given birth to several well-formed and healthy calves, was delivered of one on the 31st of March, 1829, after an undisturbed period of nine months and ten days of utero-gestation. The new-born calf was of ordinary weight and size, except that the thorax was considerably compressed, and from its antero-inferior part hung a large pedunculated tumour. M. Ulisse Belvederi, the veterinary surgeon that first saw the case, observed the rhythmic contractions of the mass, and recognised that the heart had remained out of its natural cavity. The surface of the tumour was soft, and looked like the mucous membrane of the intestine; the hairy integument stopped short at the margin of the sternal aperture, through which the great vessels reached the base of the heart, and constituted the peduncle of the dependent mass. Shortly after birth, the heart-beats were little more frequent than usual; the animal could barely stand, but approached its mother several times, for the purpose of sucking; as soon as it grasped the teat, the breathing became oppressed, and syncope usually came on, but was of short duration. Twelve hours after birth the tumour was notably increased in size, had lost its soft mucous aspect, was hot, dry, and had become of a dull red colour, especially

towards its upper part. The contractions were rapid, but not so manifest as before. Respiration was now laboured; and attempts having been made to cause the calf to swallow some milk, this was thrown back again into the mouth, and symptoms of suffocation supervened. Four hours before death the heart had become of an opaque azure tint, and a purplish hue was observed on the visible mucous membranes. The very rapid movements of the heart consisted in alternating dilatations and contractions of its upper and lower portions, so that deep grooves divided it into three sacs; two upper ones, the largest, but possessed of thinner parietes, dilated, whilst the inferior or median one contracted; this rhythmic action was soon indistinct, and followed by rapid oscillating or undulatory movements. Irregular twitchings of the external muscles, alternated by tetanic spasms, were the last symptoms manifest, and the animal ceased to live twenty-five hours after birth. After death the purple tint of heart and membranes disappeared. The heart looked much like a darkish-coloured muscle.

The subject was injected, and then carefully examined by Professor Alessandrini, who at once looked for the coverings of the heart. In the vicinity of the grooves above mentioned, he discovered that a thick membrane was covering the organ. It was readily opened out, and found to consist of an internal fibrous tunic, continuous above with the blood-vessels, and which constituted the true pericardium; the external layer of this envelope was an extension of the true skin deprived of hair, and which had assumed the soft mucous aspect so constantly seen round external apertures of the body, where skin is continuous with true mucous membranes. The existence of the serous lining to the pericardium could only be determined where adhesions had not yet formed. Alessandrini believes that if the calf had lived a few more hours, the preternatural bond of union between the various coverings of the heart, and the heart itself would have been complete, and have rendered this case in all like others that have been described, and in which the absence of the pericardium has been looked upon as an essential condition in this form of monster. Alessandrini, moreover, adds, that whoever engages in pathological dissections, both in man and the lower animals, will meet with lesions of this kind in the adult; and many cases of absence of the pericardium are thus readily explained.

The more important facts connected with this case were revealed on further investigation. The heart was found to consist of three cavities; that is to say, two auricles and a

ventricle. In the latter was the rudiment of a septum, and towards its base were four openings—two auricular, and two lesser arterial ones, whence emerged the aorta and pulmonary artery. The tricuspid valves are replaced by a broad and slender membrane, springing from the upper part of the ventricle, near the anterior border of the arterial apertures, connected with the parietes of the ventricle by a few weak tendinous filaments. The position and sphere of motion of this membrane prove that it performed the functions of the tricuspid valve. A membrane turned in the opposite sense, but otherwise similarly disposed, exists in the place of the mitral valve. The arterial openings close to each other are guarded by delicate semilunar folds, just as in health.

The ventricle is the same thickness all over, and that it is formed by the fusion of the two can only be determined by the existence of an external groove and of the internal rudimentary septum. The right auricle which receives the two *venæ cavæ* is flabby, only slightly muscular, and has not the internal reticular appearance that in the normal state is seen as due to the *musculi pectinati*. The left auricle is of normal bulk and structure, but is lengthened out; it is only the auricular appendage that protrudes through the sternal aperture; the sinus venosus is prolonged midway into the thorax, and there receives the great pulmonary veins. The pulmonary artery and aorta are joined together by areolar tissue; they have a free passage through the sternal aperture and pass upwards, slightly inclining forwards into the thorax, towards the upper part of which they are joined by the *ductus arteriosus*; the pulmonary artery then bifurcates. With reference to the veins, the most singular condition was that of an anastomosis between the anterior and posterior *venæ cavæ*, so that only one trunk entered the right auricle; at the aperture of this common trunk was no Eustachian valve. Between the auricles was a large foramen ovale without valve. It is very evident that the commingling of arterial and venous blood in the heart was complete, and this mixed blood it was that entered both systemic and pulmonic arterial systems, accounting for the cyanosis, for the disturbance of the respiration, and, indeed, for all the morbid phenomena that caused the speedy death of the animal.

The heart, arrested in its development, had in this calf the construction of the heart of reptiles. The central organ of circulation in a tortoise only differs from the one above described in the auricular septum being impervious and in the absence of *ductus arteriosus*. Two causes, then, says Alessandrini, have chiefly contributed to the formation of

this monstrosity. The first is arrest of development of the heart itself, and the second is the premature closure of the thoracic parietes, which prevented the heart assuming its natural position within the chest.

(*To be continued.*)

Facts and Observations.

CONTRIBUTIONS BY MR. M'KENNA TO THE CONVERSAZIONE
OF THE BELFAST CLINICAL AND PATHOLOGICAL SOCIETY,

HELD APRIL 30, 1856.

WE are pleased to find that the members of our profession do from time to time take part at those meetings in their respective localities which tend to promote the advancement of science; since, in proportion as this obtains, so will be the onward progress of medicine, whence will follow the amelioration of the condition of man and of animals, by the mitigation of "the many ills which flesh is heir to." By so doing, they also raise the profession as a body, and aid in giving to it the *status* it merits.

It was well remarked by the President, Dr. E. G. Malcolm, in his address delivered on the above occasion, that "science in all its divisions—in all its apparently varying characters—call it by what title you will—is one and the same; the discovery and interpretation of the laws of our common Creator." To render manifest the validity of the proposition that medical progress only became real when science became the pioneer and guide of medicine, it was not necessary, he observed, to do more than touch the salient points. "Like to the benighted traveller, who walks on and on, in the vain hope of reaching his destination, but who, in reality, has lost the true path; so medical knowledge, in the early times, endeavoured to advance by the changing light of *ignes fatui*, which successive hypotheses had engendered from time to time. It was reserved for science to light the traveller on his way, to dissipate the clouds which hovered o'er the road to truth, and to remove, with a single touch, obstacles to onward progress which seemed colossal to a pre-scientific age." We therefore hope our professional brethren will not only continue but increase in thus well-doing. Each can do something in his allotted sphere, since no one is so fully occupied at all times with the duties of his calling, as not to find a few leisure moments to devote to the investigation of

some branch of science connected with his profession, the following out of which, in his periods of relaxation, will tend to the development of truths perhaps not before observed, the promulgation of which may benefit mankind.

These remarks have been elicited on reading the following from the Report of the *Conversazione* already adverted to :

“Mr. William M’Kenna, veterinary surgeon (for the first time, we believe, in this city), exhibited the following interesting collection of veterinary instruments and preparations, illustrative of hippopathology, &c. The following is a list of the principal :

“Hind and fore legs of the horse, the arteries and veins injected, and showing the nerves, tendons, and ligaments.

“Injected fore leg, arteries, and veins, showing the nerves, various ligaments, interior of the joint, capsule, coffin and pastern joints.

“Ligamentous preparations of the leg of the horse.

“Injected leg, exhibiting a ruptured and reunited suspensory ligament—commonly called ‘breaking down.’

“Preparations of the bones of the knee and hock of the horse, showing their articulations. Various morbid preparations of the bones of the foot and leg.

“Preparations of the bones of the fore and hind legs of the ass.

“Preparations of the cranium of the ass, with the names of the bones, &c., marked.

“In appropriate proximity to this collection we noticed a full-sized bust of the late Edward Coleman, Esq., Professor of the Royal Veterinary College of London, as also the following volumes pertaining to the veterinary department.”

[Here follows a list of the books, a goodly number, both ancient and modern, which we need not particularise.]

“The following list comprised the veterinary instruments in Mr. M’Kenna’s collection:—Set of dental instruments, with tooth-rasps, &c., complete; metallic wire for sutures, and a variety of needles for same; various trocars, with silver canulas, as used for horses and cattle; patent back fleam, with pin cutter (this has superseded the ‘bleeding-stick’); lancets of different sizes and dimensions; male and female catheters for horses; patent sliding seton needle (‘this instrument is capable of overcoming any resistance without risk’); box of various seton needles, and instruments for the operation of neurotomy, &c.; probe-pointed bistouries, of different sizes and forms; the improved castrating knife, with the various clams used for castration; set of cupping instruments, with exhausting spirit lamp; the balling gun, and

Varnal's improved screw balling iron; tobacco-smoke enema apparatus; Read's patent stomach-pump, and enema syringe; the patent probang and cattle tube; the improved cradle for horse's neck; the sliding and other bronchotomy tubes; firing irons, with shifting handles; horse's feet, variously shod, showing the method which has been adopted to preserve the foot, and overcome the effects of diseases. A great variety of pattern shoes, including Coleman's expansion shoe."

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF
SCIENCE.

THAT the proceedings of this Society, which has recently held its annual meeting at Cheltenham, should be rich in matters connected with medicine, is not at all surprising. From the reports in the public journals we select the following, observing that probably more will follow.

1.—*Cause of the Coagulation of the Blood.*

The Astley Cooper prize of £300, presented triennially through the College of Surgeons, has this year been awarded to Dr. B. W. Richardson. The subject of the Essay was the Coagulation of the Blood. As Dr. Richardson gave an account of his researches at the Physiological Section of the British Association, we are enabled to state that this Prize Essay contains the announcement of a very important discovery. The cause of the coagulation of the blood has hitherto been a mystery to physiologists. Dr. Richardson has demonstrated that the cause of the fluidity of the blood is the presence in the blood of the volatile alkali ammonia. This fact he has arrived at by a series of well-conducted experiments. The communication was listened to with the deepest interest by the audience; and, at the conclusion, drew forth the warmest eulogium from the President of the Section and the physiologists present.

An abstract of this paper being promised, we shall not lose sight of it.

2.—*On several new methods of detecting Strychnia and Brucia; a New Method of Extracting the Alkaloids from Nux Vomica, for Toxicological and Manufacturing Purposes. Experiments on Animals with Strychnia, and probable Reasons for non-detection*

of Strychnia in certain cases. A new Method of Instituting post-mortem Researches for Strychnia.

By Mr. T. HORSLEY.

In the first lecture Mr. Horsley observed that the circumstances attending Palmer's trial induced him to make a series of experiments on the subject, and he tried the effects of a precipitant, formed of one part of bichromate of potash, dissolved in fourteen parts of water, to which was afterwards added two parts in bulk of strong sulphuric acid. This being tried upon a solution of strychnine, the agent was entirely precipitated in the form of a beautiful golden-coloured and insoluble chromate. The experiment, as performed by Mr. Horsley, was very interesting, and scarcely a trace of bitterness was left in the filtered liquor. He did not claim to have originated this discovery of the use of a chromic salt and an acid liquor; but the point to which he called attention was the essential difference in the mode of application, and he maintained that it was as much out of the power of any human being to define the limit of sensibility which he had attained, as it would be to count the sands or to measure the drops of the ocean. Taking thirty drops of a solution of strychnia containing half a grain, he diluted it with four drachms of water. He then dropped in six drops of a solution of bichromate of potash, when crystals immediately formed, and decomposition was complete. Splitting up the half grain of strychnia into millions of atoms of minute crystals, he said that each of these atoms, if they could be separated, would as effectually demonstrate the chemical characteristics of strychnia as though he had operated with a pound weight of the same. He then showed the chemical reaction with those crystals. Dropping a drop of liquor containing the chromate of strychnia into an evaporating dish and shaking it together, he added a drop or two of strong sulphuric acid, and showed the effect as previously noted. He next showed the discoloration produced in chromate of strychnia and chromate of brucia by sulphuric acid, the former being changed to a deep purple and then to a violet and red. It had been asserted since the trial of Palmer that the non-detection of strychnine in the body of John Parsons Cook was owing to the antimony taken by the deceased having somewhat interfered with the tests. Such a supposition was, in his (Mr. Horsley's) opinion, absurd. Nothing, he considered, could more incontestably disprove the fallacy than either of two new tests which he then performed. These he considered

double tests, because they had first the obtainment of a peculiar crystalline compound of strychnine, which was afterwards made to develop the characteristic effects by which strychnine is recognised. Mr. Horsley next related a series of experiments which he had made on animals with strychnine, and entered into the probable reasons for its non-detection in certain cases, although (as he had just shown before) a method of detecting infinitesimal quantities of strychnia by tests. He procured three rats, at seven o'clock p.m., he (assisted by Dr. Wright) gave each rat a quarter of a grain of powdered strychnia, and two hours afterwards a quarter and half a grain more to one of the three. Next morning at four o'clock they were all alive, and had eaten food (bread and milk) in the night, but at seven, or a few minutes after, they were all dead. The longest liver was one of the rats that had only had a quarter of a grain. In about three hours afterwards he applied the usual test, but could not detect the least indication of strychnine in the precipitate. There was, moreover, a total absence of bitterness in all the liquors. He tried every part of the bodies of the rats with the like results. What, then, became of the strychnine? Had it been decomposed in the organism, and its nature changed, as Baron Liebig intimated? As to the non-detection of strychnine, he thought it not improbable that the strychnine might have become imbibed into the albumen or other solid matter, and so abstracted from the fluid, forming by coagulation (say, for instance, in the blood) a more or less insoluble albuminate. This idea had occurred to him from noticing the coagulation (say, for instance, in the blood) of a more or less insoluble albuminate. Further, from noticing the coagulation of the glairy white of egg with strychnine, and the fact of his not recovering the full quantity of the alkaloid whenever he had introduced it. At any rate, it merited consideration. In his second experiment he administered three quarters of a grain of strychnia to a wild rat, but the animal evinced little of the effects of poison, and it was purposely killed after five days. His third experiment was with two grains of strychnia, administered as a pill wrapped up in blotting paper, to a dog—a full-sized terrier. It was apparently quite well for five hours, when the operator went to bed, but was found dead next morning, but lying apparently in the most natural position for a dog asleep. When taken up, blood flowed freely from its mouth. “On opening the animal (continued Mr. Horsley) I found the right ventricle of the heart empty of blood, whilst the left was full, some of the blood being liquid and some clotted.

The stomach was carefully secured at both its orifices, and detached. On making an incision, I was surprised at not seeing the paper in which I had wrapped the pill, naturally expecting it would have been reduced to a pulp by the fluid of the stomach. I, therefore, sought for it, and, lo ! here it is, in precisely the same condition as when introduced into the gullet of the dog, and containing nearly all the strychnine. I have been afraid to disturb it until I had exhibited it to you, and now I will weigh the contents, and ascertain how much has been absorbed or dissolved. This experiment is important, as showing the small quantity of strychnia necessary to destroy life ; and, had I not been thus particular to search for the paper envelope, it might, possibly, have led to a fallacy, as I must have used an acid, and that would have dissolved out the strychnia, and the inference would have been that it was obtained from the contents of the stomach, whereas it had never been diffused. In this case, also, none of the absorbed strychnia was detectable in the blood or any part of the animal, although the greatest care was observed in making the experiments." The talented lecturer, who was listened to throughout with great attention, added that he had made further experiments, which he thought proved that it was highly probable a more or less insoluble compound of organic or animal matter with strychnia is formed.

3.—*On the Products and Constituents of Wheat.*

By Dr. GILBERT.

Dr. Gilbert's paper contained the results of a large number of experiments made by him and Mr. Lawes, during a period of several years, upon wheat grown in this country as well as abroad. Dr. Gilbert subjected the various coarse and fine varieties of flour to analysis, and showed that the nitrogen increased in proportion as the sample was coarser and contained more bran. The flour that contained least nitrogen was that which took up least water in the process of bread-making, and an interesting question arose as to the nutritive value of bread containing much or no bran. Dr. Gilbert's opinion being in favour of the latter, as far as working men are concerned, notwithstanding the theoretically higher value of bread containing bran. Another interesting fact stated by Dr. Gilbert was that the Black Sea wheat in Europe and the Southern State wheat in America were far richer in gluten than those from more northern latitudes ; those from Dantzic containing least gluten, while they stood highest among bread-making grain. The character of the

gluten seemed dependent in some degree on its oily constituent, and therefore the quality of the bread depends on the maturation of the seed.

Dr. R. D. Thomson remarked that the value of bread might depend on the state of hydration of the starch and gluten; but was doubtful as to the value assigned to the nutritious qualities of starch, as the French chymists proved that the starch was often left undigested.

Dr. Voelcker stated that he had arrived at similar experimental conclusions as *Dr. Gilbert*; but while he acknowledged that starchy bread was mechanically the best, he combated *Dr. Gilbert's* view, that this was the most wholesome kind of bread for the working man. He traced the phosphoric acid found by *Dr. Gilbert* in the bran to phosphorus contained as such in the gluten, *Dr. Voelcker* having found this element in caseine and legumine.

Extracts from British and Foreign Journals.

HEREDITARY INFLUENCE, ANIMAL AND HUMAN.

THE problem of hereditary transmission, physical and moral, although one of the most interesting of physiological problems, is also one of the most baffling. In spite of its obscurity, it fascinates the inquirer; perhaps with all the greater force because of its obscurity, for, as *Spinoza* truly says, men cease to admire that which they fancy they understand: *tum enim vulgus rem aliquam se satis intelligere existimat quum ipsam non admiratur*. The question of hereditary influence has descended from antiquity encumbered with prejudices and deceptive facts, which seemed coercive and conclusive, but were in truth only one-sided; and encumbered still more with hypotheses formed in ignorance of Nature's processes. It has reached us a problem still; every scientific mind not prepossessed by an hypothesis, nor content to disregard a mass of facts, must pronounce the answers hitherto proposed deficient in the primary requisite of comprehending all the phenomena. Nevertheless, answers abound. Every cattle-breeder, who rises to the height of a theory, has his theory on this complex matter, and acts upon it in the breeding of cattle and poultry. Every village gossip, every *Mrs. Gamp*, has her facts and her opinions, which, in expansive moments, she delivers with great confidence. Every physician has his theory, especially with reference to the transmission of dis-

ease. Even the man of letters is not without his generalization on the transmission of genius: "All men of genius," he tells you, "have had remarkable mothers;" in support of which generalization he counts off upon his fingers the illustrations which occur to him, perfectly heedless of the mass of cases in which the mothers have not been remarkable.

The various theories imply variety of interest in the question, and a practical need for the solution. A subject at once so interesting and important may well claim some attention from us here; and we shall endeavour to disengage it from all technical difficulties, so as to present it in a form intelligible to the general reader, and to clear up many misconceptions, popular and scientific, which at present obstruct the question. The three works referred to in this paper,* with many others less directly bearing on this subject, will supply us with abundant facts, and may be recommended to readers desirous of pursuing the inquiry. Dr. Lucas has, in two bulky octavos, gathered from far and wide a mass of material, good, bad, and indifferent, with laudable diligence, but with a want of discrimination not so laudable. He is erudite, but he has *les défauts de sa qualité*. His erudition is utterly uncritical; and yet it is obvious that the sole value of the cases collected depends on their authenticity. It is the common error of erudite men to imagine that quantity supplies the place of quality. They fancy themselves rich when their purses are filled with forged notes; and so long as these notes are kept from presentation at the bank, their delusion is untroubled. Dr. Lucas has far too many of these notes in his purse: the reader must take up his volumes with great caution. Mr. Orton makes no such erudite display; but he has collected some curious facts, both from his own experience and from the experience of other breeders. M. Girou is one of the authorities most frequently referred to by writers on this topic. To vast practical experience in cattle-breeding he adds very considerable physiological knowledge and force of intellect.

Heritage (*l'hérédité*), or the transmission of physical and mental qualities from parents to offspring, is one of those general facts of nature which lie patent to universal observation. Children resemble their parents. Were this law not constant, there could be no constancy of species: the horse

* 'Traité de l'Hérédité Naturelle dans les Etats de Santé et de Maladie du Système Nerveux.' Par le Dr. Prosper Lucas.

'On the Physiology of Breeding.' Two Lectures delivered to the Newcastle Farmers' Club. By Reginald Orton, M.R.C.S.

'De la Génération.' Par M. C. Girou de Buzareingues.

might engender an elephant, the squirrel might be the progeny of a lioness, the tadpole of a tapir. The law, however, is constant. During thousands of years the offspring has continued to exhibit the structure, the instincts, and all the characteristics of the parents. Every day some one exclaims—as if the fact surprised him—“That boy is the very image of his father!” yet no one exclaims, “How like that pug dog is to its parent!” Boys or pug dogs, all children resemble their parents. We do not allude to the fact out of any abstract predilection for truisms, but simply to marshal into due prominence an important truth, on which the whole discussion of heritage must rest. The truth is this: Constancy in the transmission of structure and character from parent to offspring, is a law of nature.

That this truth is not a truism we shall show by at once contradicting, or at least qualifying it. The very same experience which guarantees the constancy, also teaches, and with almost equal emphasis, that this constancy is not absolute. Variations occur. Children sometimes do *not* resemble their parents; which accounts for the exclamation of surprise when they do resemble them. Nay, the children are sometimes not only unlike their parents, they are, in important characteristics, unlike their species. We then call them deformities or monsters, because while their species is distinguished by having four legs, they themselves have six or none; while their species possesses a complex brain, they are brainless, or have imperfect brains; while their species is known by its cloven hoofs, they have solid hoofs, and so on.* Dissemblances as great are observable in moral characteristics. We see animals of ordinary aptitudes engender offspring sometimes remarkable for their fine qualities, and sometimes for their imbecility. The savage wolf brings forth occasionally a docile amiable cub; the man of genius owns a blockhead for his son. In the same family we observe striking differences in stature, aspect, and disposition. Brothers brought up together in the same nursery, and under the same tutor, will differ as much from each other as they differ from the first person they meet. From Cain and Abel down to the brothers Bonaparte, the striking opposition of characters in families has been a theme for rhetoric. Nor is this all. In cases where the consanguinity may be said to be so much nearer than that of ordinary bro-

* “Flachsland rapporte que deux époux bien constitués mirent au monde trois enfans sans avant-bras ni jambes; d’autres dont parle Schmucker n’eurent que des enfans munis de douze orteils et douze doigts.” (Burdach, ‘Traité de Physiologie,’ ii, 264.

therhood, namely, in twins, we see the same diversity; and this diversity is exhibited in those rare cases where the twins have *only one body between them*. The celebrated twins Rita and Christina* were so *fused* together, that they had only two legs between them: two legs and four arms and two heads; yet they were quite different in disposition. The same difference was manifested in the celebrated Presburg twins, and in the African twins recently exhibited in London.

It is clear, then, that offspring do not always closely resemble parents; and it is further clear, from the diversities in families, that they do not resemble them in equal degrees. Two brothers may be very unlike each other, and yet both like their parents; but the resemblance to the parents must, in this case be variable. So that when we lay down the rule of *constancy in transmission*, we must put a rider on it, to the effect that this constancy is not absolute, but is accompanied by a law of variation. It is the intervention of this law which makes hereditary influence a problem; without it, heritage would be as absolute as the union of acids with bases.

Some philosophers have tried to explain the law of constancy in transmission, and its independence of the law of variations, by maintaining that it is the Species only, not the Individual, which is reproduced. Thus a sheep is always and everywhere a sheep, a man a man, reproducing the *specific type*, but not necessarily reproducing any individual peculiarities. All sheep resemble each other, and all men resemble each other, because they all belong to specific types. What does the reader say to this hypothesis? Burdach, who adopts it,† adduces his facts: for example, a dog from whom the spleen was extirpated reproduced dogs with perfect spleens; an otter, deprived of its fore paws, produced six young with their legs quite perfect; in a word, “l'idée de l'espèce se reproduit dans le fruit et lui donne des organes qui manquaient au père ou à la mère.” The hypothesis has seemed convincing to the majority of thinkers, but it labours under one fatal objection—namely, species cannot reproduce itself, for species does not exist. It is an entity, an abstract idea, not a concrete fact. It is a fiction of the understanding, not an object existing in nature. The *thing* species no more exists than the thing goodness or the thing whiteness. Nature only knows individuals. A collection of individuals so closely resembling each other as all sheep resemble each

* See Geoffroy St. Hilaire, ‘Philosophie Anatomique,’ vol. ii; and Serres, ‘Recherches de l'Anatomie Transcendante.’

† ‘Physiologie,’ ii, 245.

other, are conveniently classed under one term, named species; but this general term has no objective existence; the abstract or typical sheep, apart from all concrete individuals, has no existence out of our systems. Whenever an individual sheep is born, it is the offspring of two individual sheep, whose structures and dispositions it reproduces; it is not the offspring of an abstract idea; it does not come into being at the bidding of a Type, which as a Species sits apart, regulating ovine phenomena. The facts of dissemblance between offspring and parents we shall explain by-and-by; they do not plead in favour of species, because species is a figment of philosophy, not a fact. The sooner we disengage our zoology from all such lingering remains of old metaphysics the better. Nothing but dreary confusion and word-splitting can come of our admitting them. Think of the hot and unwise controversies respecting "transmutation of species," which would have been spared if a clear conception of the meaning of species had been steadily held before the disputants, or if the laws which regulate heritage had been duly considered. In one sense, transmutation of species is a contradiction in terms. To ask if one species can produce another, *i. e.*, a cat produce a monkey—is to ask if the offspring do not inherit the organization of their parents. We know they do. We cannot conceive it otherwise. But the laws of heritage place the dispute in something of a clearer light, for they teach us that "species" is constant, because individuals reproduce individuals closely resembling them, which is the meaning of "species;" and they also teach us, that individuals reproduce individuals *varying* in structure from themselves, which varieties, becoming transmitted as part and parcel of the parental influence, will, in time, become so great as to constitute a difference in species. It is in vain that the upholders of "fixity of species" assert, that all the varieties observed are differences of *degree* only. Differences of degree become differences of kind, when the gap is widened: ice and steam are only differences of degree, but they are equivalent to differences of kind. If, therefore, "transmutation of species" is absurd, "fixity of species" is not a whit less so. That which does not exist, can neither be transmuted nor maintained in fixity. Only individuals exist; they resemble their parents, and they differ from their parents. Out of these resemblances we create species, out of these differences we create varieties; we do so as conveniences of classification, and then believe in the reality of our own figments.

"Les espèces," says Buffon, boldly, "sont les seuls êtres

de la nature," and thousands have firmly believed this absurdity. The very latest work published on this subject,* reproduces the dictum, and elaborately endeavours to demonstrate it. "Les especès sont les formes primitives de la nature. Les individus n'en sont que des représentations, des copies." This was very well for Plato; but for a biologist of the nineteenth century to hold such language shows a want of philosophic culture. A cursory survey of the facts should have shown the error of the conception, if nothing else would. Facts plainly tell us that the individual and the individual's peculiarities, not those of the abstract type, are transmitted. Plutarch speaks of a family in Thebes, every member of which was born with the mark of a spear-head on his body; and although Plutarch is not a good authority for such a fact, we may accept this because it belongs to a class of well-authenticated cases. An Italian family had the same sort of mark, and hence bore the name of *Lansada*. Haller cites the case of the Bentivoglie family, in whom a slight external tumour was transmitted from father to son, which always swelled when the atmosphere was moist. Again, the Roman families *Nasones*, and *Buccones*, indicate analogous peculiarities; to which may be added the well-known "Austrian lip," and "Bourbon nose." All the Barons de Vessins were said to have a peculiar mark between their shoulders; and by means of such a mark La Tour Landry discovered the posthumous legitimate son of the Baron de Vessins in a London shoemaker's apprentice. Such cases might be received with an incredulous smile if they did not belong to a series of indisputable facts noticed in the breeding of animals. Every breeder knows that the colours of the parents are inherited, that the spots are repeated, such as the patch over the bull-terrier's eye, and the white legs of a horse or cow: and Chambon† lays it down, as a principle derived from experience, that by choosing the parents you can produce *any* spots you please. Girou noticed that his Swiss cow, white, spotted with red, gave five calves, four of which repeated exactly the spots of their mother, the fifth, a cow-calf, resembling the bull. And do we not all know how successful our cattle breeders have been in directing the fat to those parts of the organism where gormandizers desire it? Have not sheep become moving cylinders of fat and wool, merely because fat and wool were needed?—*Westminster Review*.

(*To be continued.*)

* 'Cours de Physiologie Comparée,' par M. Flourens, 1856. A feeble and inaccurate book.

† 'Traité de l'Education des Moutons,' i, 116.

RESEARCHES ON ALOETINE.*

By M. E. ROBIQUET.

THE subject with which I am now about to entertain the Academy, is not perfectly new, and it has already had long and fruitless investigation at my hands.

Ten years ago, I published my first work on the juice of aloes, and I was enabled, among other results, to prove that—

1. This juice exists in the different varieties of aloes, in the state of colourless liquid, acquiring the appearance and chemical constitution which we are acquainted with, in consequence of an absorption of oxygen.

2. Socotrine aloes contains a proximate principle, to which I gave the name of aloëtine, formed of carbon, hydrogen, and oxygen, without a trace of nitrogen, but which could not be crystallized.

I shall only speak from memory of chloralise, and chloralöile, the chlorated derivatives of aloëtine, and only because their existence having been disputed, I have not taken the trouble to place crystallized specimens of them before the Academy on the present occasion.

In 1851, Messrs. Smith, of Edinburgh, were enabled to extract from Barbadoes aloes a crystallizable body, to which they gave the name of alöine. The process followed by these chemists consisted in triturating aloes with sand, removing, by lixiviation, everything that is soluble in cold water, and evaporating *in vacuo*, under the influence of a temperature of 50° to 60° C. (122° to 140° F.)

I was no little surprised to learn this result, for two reasons: in the first place, this mode of preparation was one of the first to occur to my mind, and I had applied it in vain to Socotrine aloes; and, in the next place, being of opinion, in common with all the authors of treatises on *materia medica*, that transparent and vitreous Socotrine aloes is the best of all kinds, I had not thought of using Barbadoes or hepatic aloes. Being thus punished for my excessive confidence in the statements of others, I very soon returned to my work. My first care was to repeat Messrs. Smiths' mode of preparation on Barbadoes aloes, and on vitreous Socotrine aloes. In the first case, I obtained crystals; in the second, an amorphous mass, without any crystalline appearance.

* Read to the 'Académie de Médecine,' Feb. 26, 1856.

I then dissolved a similar quantity of Barbadoes aloes in boiling water, and evaporated the solution to dryness, on a sand bath, in the open air. It became transparent and vitreous, that is to say, quite similar to Socotrine aloes; but, as soon as this transformation was accomplished, it was impossible to extract the small trace of crystals from it.

The mystery was then cleared up, and I arrived at the conviction that—

1. All the kinds of juices of vitreous and transparent aloes (Socotrine aloes, Cape aloes, &c.) have undergone the action of heat, and their crystallizable principle is metamorphosed into an amorphous substance, which is ordinarily called resin of aloes, but which is no other than aloëtime, which has become, by molecular change, amorphous aloëtime, insoluble in water.

2. All the kinds of opaque aloes with a waxy fracture were obtained by desiccation in the open air, and without the aid of heat; they all contain crystallizable aloëtime.

Messrs. Smith's process of preparation is very simple in principle, but, in practice, it is troublesome to evaporate, *in vacuo*, large quantities of liquid, and, moreover, the yield is very trifling. I endeavoured, therefore, to overcome this difficulty, and, after some failures, I arrived at the following method, which gives about 15 per cent. of product.

Preparation of Aloëtime.—Distilled water is boiled for an hour, in order to expel the air, and, when cold, 2 kilogrammes are poured on 1 kilogramme of Barbadoes aloes in powder, which is kept ready in a dish. By agitating rapidly, the solution is effected in a few minutes; the dish is covered as accurately as possible, and left to repose for about a quarter of an hour. The liquor must be decanted into a conserve glass, of such a size as to exactly contain it; a little ether is poured in, in order to expel the air as much as possible, and to prevent mouldiness; the lid is immediately fitted on, and carefully luted. It only remains to place this vessel in a cool situation, and to leave it to itself for a month. It is then opened, and, after having separated all the portion still remaining liquid, we find its interior lined with a compact mass, and, as it were, covered with stalagmites. These concretions are no other than a mixture of amorphous aloëtime, foreign earthy matters, and crystallizable aloëtime.

Now, as the latter is very sparingly soluble in cold water, and much heavier than the impurities which accompany it, it is easy to separate it, mechanically, by simple levigation.

The crude aloëtime is under the form of yellowish and radiated crystalline grains, giving way between the teeth, like

wax, and rapidly turning brown, in contact with nitric acid, and even, in damp air. To purify them completely, they must be washed in alcohol of 56 centesimal degrees (22° Beaumé), until this liquid takes a straw-coloured tint, without any red in it, and then crystallized five or six different times in alcohol of 86 per cent. (36° B.)

Dr. Pereira has described, with much care, a new variety of Socotrine aloes, recently imported into England, and which is no other than the natural juice of the plant which has undergone no manipulation. It is a chestnut brown liquid, with a powerful odour of black currant, in which float a great number of silky crystals of aloëtime.

It would appear, at first sight, that nothing is easier than to prepare aloëtime from this natural juice: simple pressure between folds of bibulous paper, and several crystallizations in alcohol, ought to be sufficient. But this is not the case, and the portion of this juice which has become altered in the air, suffices for preventing the crystallization of the aloëtime from remaining intact; at any rate, a large portion is lost. The process which is the least disadvantageous, is the following:—the liquid juice of Socotrine aloes is diluted with distilled water, to which 10 or 12 drops of liquid ammonia have been added per litre. The resinous portion of the juice is first dissolved by the alkali, and, if we operate very quickly, the portion still unaltered may be separated by filtration. Two or three crystallizations in alcohol are then sufficient for arriving at complete purification. Still, this method, however rapidly we may operate, never gives more than 4 or 5 per cent. of aloëtime.

Pure aloëtime occurs under the form of prismatic needles, of a fine sulphur yellow. At the temperature of 10° C. (50° F.), 1 part of aloëtime requires, for its solution, 10 parts of water, 2 parts of alcohol, of 36° B., and 8 parts of ether of 66° B. It is impossible to determine, exactly, its solubility at the boiling points of these liquids, because heat alters it more or less profoundly.

Owing to its sparing solubility in water, aloëtime has scarcely any taste, but its characteristic bitterness is speedily developed.

The mucilaginous pulp of the leaves of aloes contains a peculiar matter, which is colourless in the plant, but which rapidly acquires a violet red colour in contact with the air. This may easily be perceived by suddenly tearing one of these leaves, when the central part rapidly becomes coloured. This substance, whatever may be its nature, accompanies aloëtime in its last purifications; I have ascertained that to it was due

the property of being coloured red by nitric acid, attributed by Messrs. Smith to aloïne.

Without heat, pure aloëtine should colour nitric, sulphuric and hydrochloric acids, of a citron yellow. When it is boiled for about half an hour, with concentrated nitric acid, we obtain a solution which, treated with cold water, deposits chrysammic acid, in the form of a greenish yellow powder, easily recognisable by the magnificent violet tint which it communicates to ammonia. These reactions with cold and boiling nitric acid are characteristic.

After having taken so much trouble to isolate the crystallizable principle of aloes, I thought I at least should find recompense in the energetic action of aloëtine on the organism. I requested my friend, Dr. Vigla, physician to the Maison de Santé, to be kind enough to make some experiments in this respect, cautioning him that the new substance should act with ten times the energy of ordinary aloes. Here, I was completely deceived in my expectation; the first doses were carried timidly to 0.05 grammes, and produced no effect; then, successively, 0.25, 0.50, and 1 gramme at a time were administered. The observations were to the number of twenty-three.

Of these twenty-three observations, sixteen had a completely negative result; in two others, the laxative effect was well marked, and, in the remaining five, the therapeutical action was very slow, and very doubtful. All these observations were made with the greatest care by Dr. Vigla, who devoted himself with a good grace, for which I cannot thank him sufficiently, to the experiments which I desired to make, and varied several times the mode of administering the aloëtine. This substance was given to the same patients, sometimes under the form of pills, sometimes in that of powder, or in alcoholic solution; the results were always identical. In glancing over the list, we remark the observation No. 4, in which a patient, who was easily influenced by 4 grammes of calcined magnesia, was insensible to the action of aloëtine, then submitted to the action of magnesia a second time, he was again purged. Observations 8 and 16 are analogous; only, instead of magnesia, castor oil, or German brandy, was used as a comparative test. I was curious to try on myself a still more decisive experiment. I weighed exactly 2 grammes of aloëtine, and divided it into 2 equal parts: I took the first part without subjecting it to any manipulation: there was no result. The second gramme was heated to 100° C. (212° F.), until it was converted into a small amorphous and translucent mass, with no appearance of crystallization.

When thus transformed, I took it eight days after the first dose; the purgative action was not long delayed, and it was arrested only when the digestive canal was completely evacuated.

From all these facts, it results that aloëtime is the chemical and crystallizable principle of the officinal juice of the aloes, that it does not possess the purgative property of aloes, and only recovers it when, by the action of the air or of heat, it has become amorphous and uncrystallizable. It occupies the same position as that which mannite does with regard to manna, and santonine to semen-contra, and it will also be the same with cathartine, the proximate principle of senna, when it has been properly isolated, for experiment has already taught us that a very long continued decoction of senna produces a liquor which is not so active as the simple infusion, having, however, exhausted the plant of all the parts soluble in water.

The excessive bitterness of aloëtime induced me to try its action in well-characterised intermittent fevers, and it seemed to me that it would be possible to increase its efficacy by associating it with a tonic, such as pulvis ferri (fer réduit). Five cases of intermittent fever are at present under treatment, and the first results obtained enable us to perceive the efficacy of the new febrifuge. The doses which have been given are from 10 to 20 centigrammes per day for children, and from 50 centigrammes to 3 grammes for adults. The compound powder contains 1 part of aloëtime, and 2 parts of pulvis ferri. In all the patients the appetite was restored, and the fits diminished each time in intensity. As the cure is not complete, and as, in such cases, we cannot be too careful in drawing conclusions, I will now confine myself to taking date for this new febrifuge treatment, merely asking the Academy's permission to communicate the result of my observations, when the season and circumstances enable me to apply this kind of experimentation on a scale of sufficient magnitude to prevent the possibility of doubt.

In conclusion, it results from the facts contained in the present memoir that—

In a therapeutical point of view—Aloëtime, the proximate principle of officinal aloes, should not be regarded as a purgative, or, at least, as a very slow and doubtful one.

The opaque variety of aloes with a waxy fracture, such as Barbadoes and hepatic aloes, are the best; they purge efficiently, and without causing those intestinal pains which always accompany the administration of vitreous and transparent aloes, such as Socotrine aloes, Cape aloes, &c.

Pure aloëtime becomes purgative when it has been altered by the action of air and heat. Associated with pulvis ferri, it will probably be of great assistance in the treatment of fevers.

In a chemical point of view,—Aloëtime is a crystallizable substance, formed solely of carbon, hydrogen, and oxygen. It may be obtained by very easy processes, but only with the juice of Socotrine aloes, or with those opaque extracts which air and heat have not altered so as to render all their crystals amorphous.

It is aloëtime which gives, by treatment with chlorine, the crystallizable compounds to which I have given the names of chloralise and chloraloïle.

Journal de Pharmacie, April, 1856.—*The Chemist*.

THE ADULTERATION OF FOOD, DRUGS, &c.

(Continued from p. 296.)

[Although our selections were made for the above article, we again prefer the condensation given by the editor of the *Pharmaceutical Journal*.]

APRIL 16.—*Mr. T. K. Callard*, baker, Durham Terrace, St. John's Wood, stated, in reference to the use of alum in bread, that he had been ten years in the business, and had never used a particle of alum in making bread. He was not peculiar in this respect, having received forty-three letters from bakers in London, who were prepared to state upon oath that they did not use alum. Witness thought that a large proportion of the trade were anxious that something should be done to prevent the use of alum, if it could be done without checking improvements also. As the law stood at present, the baker who made the "unfermented bread," which was considered by many medical men as the most wholesome, was liable to fine and imprisonment.

Mr. Robinson, Judd Street, baker, stated to the Committee that, in order to test *Dr. Normandy's* accuracy, he had sent to the doctor a sample of flour and two loaves, one perfectly pure, and another containing alum in the proportion of 1 oz. to 16 lb. of bread. After analysing them, *Dr. Normandy* gave him a certificate, stating they were all perfectly pure, and that witness was one of the few bakers in London whose bread was not adulterated. Since then *Dr. Normandy* had

written to him, stating that he had discovered alum in his bread, and threatening to expose him.

Mr. Clapperton, of 11, Mortimer Street, Cavendish Square, said he had been mentioned in the *Lancet* as one of the bakers who sold adulterated bread. This statement had ruined his business, and obliged him to give it up. Dr. Hassall had written a letter exonerating him from it, but on application to Mr. Wakley for a portion of the bread said to have contained alum, it was refused. Witness was therefore advised that an action could not be sustained.

APRIL 27.—*Mr. John Jackson*, a miller, near Wakefield, said he was a member of a firm which had been prosecuted for vending adulterated flour, but the result of the trial was to prove that the charge was unfounded. He was of opinion that a moderate inspection of mills was desirable, but the inspector should be thoroughly competent, capable of distinguishing between the various kinds of flour; for instance, the American flour sometimes arrived in a very warm state, it was put on the quay in the barrels for a few days, when it cooled, and would then keep for two years; but if an unqualified inspector saw it in the warm state he might condemn it as unfit for food, and perhaps confiscate £10,000 worth of property.

Mr. Richter, analytical chemist at Messrs. Savory's, had had considerable experience with regard to the law affecting chemists and druggists in Germany. About thirty or forty years ago the state of things in Germany was similar to that in England, but by the introduction of a law tending to raise the education of chemists, he believed the adulteration of drugs was abolished. He thought part of this law might with advantage be introduced into England, and considered the Pharmaceutical Society was already a very important institution for the accomplishment of this object. He thought it also a very important matter, that the difference now existing between the Pharmacopœias of London, Edinburgh, and Dublin should be abolished; the variation in the strength of many of the preparations being a very serious evil.

Mr. Stafford Allen, drug-grinder, said he believed the public had been much abused by the evidence given before the Committee with respect to drug-grinders. In 1853, when his firm was established in London, it was the general wish of the wholesale drug-trade for the establishment of some grinder in whom they could have confidence. He was not prepared to say that dishonest grinders did not exist, but grinding was carried on in a much better way at present.

What was called the 4 per cent. system he had never adopted, as he considered it unfair to both parties. Composite powders he had also from the first refused to make or sell. Witness thought that no benefit would be derived from legislative interference between the retail druggist and the consumer; the public were supplied with drugs in so pure a state that very little improvement could be made.

APRIL 30.—*Mr. Goodman*, Chief Clerk to the Lord Mayor, stated, that in thirty years' experience in the legal business of the city, he had never had a case of adulteration brought before him, but was acquainted with the general law relating to adulteration. There were three remedies open to the public, viz., by action, by indictment by simple conviction before a magistrate, and by the intervention of the Excise. Unless there was some public injury arising from the adulteration, the only remedy would be by action. This referred to the general subject of adulteration. With the view of preventing adulteration he would suggest a right of search, either by inspectors appointed for the purpose, or by parties connected with the police. As to the adulteration of drugs, he thought they might be submitted to some analytical chemist.

Dr. Bingley, Professor of Chemistry to the Medical and Surgical Institution, Sheffield, detailed various substances in which he had detected adulteration, and was of opinion, from circumstances that had come to his notice, that some alteration was required in the present law with regard to the adulteration of flour, in order to prevent those who took the samples from the trader from adulterating the flour before the analysis.

Mr. Postgate, in continuation of his evidence given on a former occasion, said, the general result of his examinations of articles in various large towns was to convince him that adulteration existed in two thirds of them. He proposed as a remedy that all injurious adulterations should be declared illegal, and the seller held responsible; that some central body should decide from time to time what were injurious adulterations, and that an officer, practically acquainted with genuine commodities, be appointed by the local authorities, subject to the approval of the Central Board.

MAY 2.—*Dr. Hassall* gave some additional information, illustrated by numerous diagrams, showing the appearance of various adulterations as seen by the aid of the microscope. He observed, that not long since it was thought impossible to detect the difference between roasted coffee and roasted chicory; by the aid of the microscope nothing was more

easy; he had examined nearly every vegetable substance under the microscope, and in every instance had detected adulterations where they existed, even when the substances had been reduced to powder. Referring to the adulteration of bread and flour, witness quoted the opinion of Baron Liebig as to the injurious effects of alum on the phosphates contained in wheat; if white bread were required it could be produced by the use of lime-water in small quantity, which would not be injurious. Dr. Hassall produced to the Committee specimens of coloured confectionary, purchased within the last few days, also samples of tea, containing large quantities of lie-tea. In addition to his former evidence on the adulteration of drugs, he mentioned liquorice, which was adulterated in various ways. Out of twenty-one samples of common extract of liquorice, every one was found adulterated with starch or flour, sugar, gum, &c.; the genuine extract dissolved without leaving any residue, but the impure left from 18 to 20 per cent. Refined liquorice was adulterated to a still greater extent; out of twenty-eight samples of powdered liquorice eleven were adulterated, but as this article was used chiefly for rolling round pills, the adulteration was not injurious to health. He referred to the adulteration of turmeric, powdered rhubarb, squills, colocynth, and aromatic confection, and produced samples of the drugs. The effect of the adulteration was to neutralize the efforts of physiologists to determine the effect of certain quantities of various drugs upon the human frame. He believed that adulteration took place sometimes before importation, sometimes by drug-grinders, and, he was afraid, sometimes also by the wholesale and retail chemists; and it would, of course, be necessary to provide for each of these cases. In answer to a question from the chairman, as to the possibility of any one person carrying on twenty or thirty examinations a week of various articles, Dr. Hassall replied that one great advantage in the employment of the microscope, was the greater comparative rapidity with which results could be obtained. The number of examinations that could be made in a given time would necessarily depend, in a great measure, on the skill of the examiner and the nature of the article. But he was speaking within bounds in saying there was scarcely an article of consumption upon which he would not undertake to give satisfactory reports, to the extent of 100 samples a week. When chemical analyses had to be made, it would require a much longer time to prepare a report. Upon the question of adulteration, Dr. Hassall explained that selling one article in place of another did not constitute adulteration. This was

substitution. Again, the presence of a foreign substance in an article, in consequence of imperfect preparation, was a simple impurity or contamination. An adulteration might be defined as the intentional addition of an article to any substance, the presence of which was not acknowledged in the name under which that substance was sold. It would be desirable to specify those adulterations which were prejudicial to health, and those which were simply commercial frauds. As to the remedies to be adopted, he was disposed to repeat his former opinions, adding a further suggestion, that it should be rendered imperative on persons convicted of giving false weight, or selling adulterated goods, that they should keep a placard, exhibited in the most prominent part of their windows, for three, six, or nine months, containing the text of the judgment condemning them.

The Chairman said that the Committee had received a letter from Dr. Normandy, one paragraph of which the Committee had decided should be read. The paragraph was as follows—

“I told him (Mr. Robinson) that these samples would be no proof of Messrs. Gilbertson’s usual practice as bakers, but that I would call in a few days at his shop and choose a loaf there myself. I did so, and I never denied or affirmed that I analysed the samples which Mr. Robinson had brought me; for, on account of the unsatisfactory result which the analysis of such samples would have given, I kept no memorandum of it; but from the certificate, which it appears Mr. Gilbertson holds, it seems I analysed them, and that this analysis agreeing with that of my own sample, I gave him the certificate in question.”

The Committee then adjourned, and it was understood that no further evidence would be received, the next meeting being to consider the Report.

THE VETERINARIAN, SEPTEMBER 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

A VISIT TO THE VETERINARY SCHOOLS AT BRUSSELS
AND BERN.

AN opportunity presenting itself last year to visit the Veterinary Institution at Alfort, near Paris, we gladly availed ourselves of it; and with no less assiduity did we seize a similar one that offered itself this year, to see the School at Brussels. And in the continuance of our journey, accompanied by Professor Brown, of the Royal Agricultural College, Cirencester, we also inspected the Veterinary School at Bern.

We are desirous of ascertaining how they conduct those establishments on the Continent, since, unlike ours in this country, they are supported by, and under the immediate direction of, their governments. Moreover, from comparison we may derive profit, as many of them were established long before that of London, and their curriculum is far more extended. To express an independent and unbiassed opinion here, we should say that while some divisions of science taught in the veterinary schools on the Continent are uncalled for, in our own it would be well if some that are neglected were introduced. This is an opinion we have long held, and fearlessly advocated, being convinced that good to the profession would result from its adoption. We are not called upon now further to advert to this.

The Veterinary School at Brussels is situated just beyond the boulevards, therefore within a convenient distance of the city. Double lodges stand on either side of its entrance, and the general appearance is good and commanding; while improvements are still being made in the buildings; all the older portions are about to be taken down and replaced by new ones. The extent it covers must be several acres, there being a botanical garden attached, which, however, does not

appear to be kept in very good order. The alterations going on may be the cause of this.

The staff of the school consists of a director, six ordinary professors, two extraordinary ones, four repetitors, an almoner, an economist, two overseers, and a secretary, with the necessary subordinates. The director and professors are nominated, and their appointments revoked, by the crown. Their salaries are fixed by the Minister of the Interior, under whose control the subordinate officers are placed. He likewise corresponds immediately with the director of the school, who has its entire management, and who, in his turn, communicates with the other members of the staff.

Besides the lectures given by the professors, in their respective departments, they are required to interrogate the pupils for at least an hour and a half each week, on the subject-matter of the instructions they have given, so as to ascertain if they are acquainted with it. The result of these inquiries is sent to the director of the school. Every month a written composition is exacted from each student on some branch of the curriculum determined on by the professors, who inspect the same, and return the theses, with their notes attached to them.

In the absence of a suitable class-book for any department, the teacher in that particular division is called upon to furnish one for the use of his pupils. The period of instruction occupies ten months in the year, there being two vacations, one of two months in the summer, and another of a fortnight in the winter.

A preliminary examination is instituted of candidates prior to their admission as students, the last fortnight in July, in the presence of the director; which is conducted by three persons unconnected with the school, these being nominated by the Minister of the Interior. It consists of—

1st. A knowledge of the French language, including orthography, grammar, special syntax, grammatical analysis, logical analysis, and a composition on a given subject.

2d. Arithmetic, including the four rules, applied to whole

numbers, and fractions and decimals; proceeding as far as elementary mathematics.

3d. Geometry; theorems and problems.

4th. Geography of Belgium, and general geography.

5th. The history of the country.

The number of pupils at present there is about sixty. They are required to study for the period of four years before they can practise under the authority or sanction of the school. This, it seems, depends on the report made by the several professors to the Minister of the Interior on the abilities of the pupils, as manifested by them at their practical examinations, which occupy more than a week, and are public. In no case is a pupil permitted to be more than six years in attendance, so as to acquire the necessary information. The study, for the first year, comprehends the Elements of Physics, Chemistry, general Zoology, descriptive Anatomy of the Horse, Dissections, principles of Farriery, and Medical Botany. That for the second, includes most of the above divisions, with the addition of the Principles of Agriculture, and Comparative Anatomy. That for the third, all the above, Materia Medica and Pharmacy, general Pathology and Therapeutics, practical Farriery, Anatomy of the Regions, the Action of Medicines, Clinique and Pharmaceutical Manipulation. The fourth year, in addition to all this, embraces Pathological Surgery, Obstetrics, Hygiène, Jurisprudence, Sanatory Police, and Experimental Surgery. A course of equitation is given to those students who are willing to pay the extra charge for it. After the close of the course of lectures for the session, each pupil is submitted to a general examination, which has for its object the ascertaining if he have acquired a sufficient amount of knowledge so as to admit him to the next and superior course; if not, he is again compelled to repeat his studies in that division, or to quit the school. No student is allowed to attend any course more than twice; if, after that, he is found deficient, he is dismissed as being incompetent.

A distribution of prizes takes place yearly, under the presidency of the Minister of the Interior or his delegate, and in

presence of a commission of *surveillance*, and all the professorial corps.

The majority of the students reside within the walls of the establishment, but *externe* pupils are admitted for instruction, under the sanction of the government. They wear a uniform in common, and should any violation of the laws of the school be committed by them, they are subjected to the punishment of public or private censure, or confinement, or expulsion, as may be thought necessary; the last-named being determined on by the Minister of the Interior. Only on certain days is the porter at the lodge permitted to allow the pupils to pass outside the walls, within which there is a chapel they are required regularly to attend, the service being conducted by the almoner.

Horses, and other animals belonging to the public, are gratuitously attended to every morning, between eight and ten o'clock; the senior pupils performing the operations, and doing what is necessary, under the direction of the appointed professor.

The professors are not allowed to carry on private practice, but any case of more than ordinary interest they will visit, charging only for the medicines ordered by them. This, it is considered, enables them to become conversant with such varied information as will profit the students and the school.

Having instituted these inquiries into the internal arrangements of the establishment, we proceeded to inspect its buildings. These, from most of them being detached, cover a somewhat large space of ground. There are three or four lecture-rooms, spacious and well ventilated. That of the Professor of Chemistry is connected with his laboratory, and also the apartment in which the philosophical instruments are kept; the principles of natural philosophy being likewise taught by him. The electrical machines and galvanic batteries were both large and numerous, although this power has not been successfully applied to the horse; these, in common with mounted magnets, being only used by him for his lectures. We were also shown Matteucci's beautiful apparatus for proving the identity of the nervous and electrical forces.

Apparatus for showing the mechanical powers, with optical instruments, and others for explaining the theory of colours and of sound, are also employed by him, and they are kept in as admirable condition, as they are liberally supplied by the government. He was engaged in an experiment, considered by him to elucidate one of the phenomena attendant on life and organization. Albumen, obtained from the egg or muscular tissue, being diffused through water, and having carbonic acid gas or atmospheric air passed through it, becomes, in about three weeks, coagulated, and forms an irregularly reticulated mass, resembling a false membrane. Albumen derived from the blood has not yet been found so to conduct itself.

The dissecting rooms are spacious and lofty. They dissect the horse, the ox, and the dog. The infirmaries are not large. On one side are stables capable of accommodating about fifty horses; and on the opposite side is a corresponding building for cattle and sheep; while annexed is another smaller one for dogs. The patients then in the infirmaries were but few, the greater number being dogs.

Near to the infirmaries is the forge, in which are five fires with anvils and the necessary tools, travises, &c. Here the students, in turn, are required to work from eight to ten o'clock in the morning, principally shoeing the horses of the public that are brought for gratuitous advice. It is to be regretted that they are still allowed to perform experiments on the living animal, some of them being as cruel as they are unnecessary.

The museum consists of one large room, its ceiling and roof being supported by iron pillars. Placed against the walls are glass cases, in which the numerous preparations are kept. In pathological specimens it is very rich. As yet the whole is not satisfactorily arranged; this, like other parts of the building, having recently undergone alteration. In the centre are the skeletons of the different domesticated animals, with models for practically exemplifying difficult and natural parturition in the mare and cow. In upright glass cases, on either side, are specimens of minerals and shells, parasites, stuffed birds and animals, with models in

wax of the more important muscular and vascular parts of the animal frame. In time, the collection will be an interesting one, and add considerably to the value of the school as a means of instruction.

The veterinary establishment at BERN is much smaller than that at Brussels, but it is very creditable to the canton. It is not capable of accommodating more than from twenty-five to thirty pupils, and about the same number of horses; cattle being attended to only at their owners' places. There are four professors, whose respective divisions are anatomy, physiology, pathology, and therapeutics.

Professor Anker politely accompanied us through the infirmary, and described the more interesting cases under treatment. A case of rheumatism had yielded to deep acupuncture in the muscles of the thigh, after, as he stated, all the ordinary remedies had failed to do any good. On inquiry, we ascertained that none of the preparations of colchicum had been tried. Mallenders, so called even here, is found to yield to a dilute solution of corrosive sublimate in hydrochloric acid. Some practitioners, however, prefer a solution of arsenic. Farcy, the professor said, is generally eradicated by the timely use of cantharides with tonics; but as to glanders, the best and most effective way of getting rid of that disease he believed was to shoot the animal. The state in which the stables were, at the time of our visit, was anything but creditable, from the horses being allowed to stand on dirty litter.

Two years and a half's study are required from the students, allowing the same vacations as at Brussels; after which period, being found on examination competent, they receive a certificate to practise under the sanction of the school. There are those who practise without this certificate, but they are not recognised nor protected by the government. The school was founded in 1807, and is situated outside the walls of the town, a little beyond the celebrated bear-garden. One of the poor brutes was poisoned the week before we were there by means of arsenic, given to it by some miscreant. The bear is held in high repute by the Bernese, this animal being

associated with some legend of the country. You find its representation almost everywhere throughout the canton.

The museum is at some little distance from the infirmary, and appeared to us to be a museum of comparative anatomy, there being preparations in it from man and the domestic animals, fishes, and serpents, down to the tadpole. All the smaller preparations are enclosed in glass cases, and are very numerous, although seemingly not very well arranged. We observed great numbers of parasites, also of urinary and intestinal concretions, with others from the mammary glands, and osselets taken from the muscles. They frequently meet with the worm in the eye (*filaria oculi*), but they never attempt its extraction, as the result is not satisfactory, the organ being always in a diseased state, which favours the development of the parasite.

Many of the morbid or pathological specimens were very interesting, but the shortness of our visit permitted us not to particularise nor to investigate them as closely as we could have wished. Altogether, we think they have the elements of a good school there, although it appeared to us to be wanting in the spirit to carry it out. But it should be remembered that Bern is only one of the cantons of Switzerland, although the largest, it being 150 miles long and 75 miles broad ; its capital of the same name contains 13,000 or 14,000 inhabitants ; and that there is another school at Zurich, which, unfortunately, not knowing the existence of, we did not visit. We were informed that it is somewhat smaller than the school at Bern, but conducted in the same way.

Veterinary Jurisprudence.

WE have received the *Derby and Chesterfield Reporter*, containing a case tried at the County Court, Derby: *Spencer v. Saxelby*. It was one of warranty or no warranty, containing little of a professional nature otherwise. Witnesses, as usual, were called *pro* and *con*.

Mr. Statham, veterinary surgeon, being examined, said the pony was sent to his stables for a week. He had not

attended the pony; but, about two months before he was sold, Mr. Saxelby asked his opinion whether he should sell him or fire him, and he (witness) said "sell him as he is, for it is a very uncertain case." The disease had been coming on a long time; it was on the coronet of the near fore foot. If he had been sound twenty guineas would have been a good price for him, but with the unsoundness he was not worth £10. Witness's bill was £1. 2s. 6d. for keep, &c.

Mr. Boroughs: I suppose, Mr. Statham, anybody would see with half an eye that the pony had a contracted foot?

Mr. Statham: I doubt whether you would see it with both eyes. (Laughter.) It was quite perceptible to me. The unsoundness would gradually get worse.

Mr. Merewether replied, calling upon the jury at once to dismiss from their minds the conversation about arbitration, and the alleged talk in the Market Place, as unimportant matters introduced to hide the real point in the case. The question for their consideration was, did the defendant warrant the pony? The defendant stated that nothing was said about the horse being lame, or about a warranty; and here he was distinctly contradicted by one of his own witnesses, who said "Mr. Spencer asked Mr. Saxelby whether he would warrant the pony, and Mr. Saxelby said no; he never would warrant it." He put it to the common sense of the jury whether the plaintiff or any other sane man, seeing the horse lame on one foot, would have given £19 10s. for it without a warranty. Then again Mr. Saxelby knew Mr. Statham's opinion about the horse, and yet, according to the evidence for the plaintiff, he stated the horse was slightly lame through having a shoe off. Mr. Saxelby did not tell the Jury what he gave for this 30 or 40 guinea pony.

His Honour, in summing up, said as there was no dispute about the soundness, only one question remained for the consideration of the Jury, and that was with reference to the warranty. It was not necessary in such cases that the word "warrant" should be used. If a person says, "Is the animal sound?" and the seller says "it is," that is a warranty; but if he says I believe him to be sound, not knowing anything to the contrary, that would not be a warranty. If he says "I uphold him to be sound," or that "he is sound," that would be a warranty. Now the question was, was anything to that amount said; and in this case there was the usual discrepancy. The plaintiff alleges that the defendant said "I'll warrant it all right." *Campion*, his witness, puts it thus: "Will you warrant him sound?" and the defendant said "Yes." Then, in the case for the defence, Saxelby says

nothing was said about lameness or a warranty, and one of his witnesses said distinctly that the word warranty was used, for that Saxelby declined to warrant the pony. It was for the Jury to reconcile all this, and say to which side they gave the credit as to whether there was or was not a warranty.

The Jury returned a verdict for the plaintiff—damages, £9. 7s. 6d.

MISCELLANEA.

EFFECT OF MUSIC ON HORSES.

THE eccentric Lord Holland, of the reign of William III, used to give his horses a weekly concert in a covered gallery, especially erected for the purpose. He maintained that it cheered their hearts and improved their temper, and an eye-witness says that they seemed to be greatly delighted therewith.

OBITUARY.

AGAIN we have to add to the list of those who have gone before us; their journey and their labour o'er. The poet has said:

“There is no death! What seems so is transition.
This life of mortal breath
Is but a suburb of the life Elysian;
Whose portal we call Death.”

“The grave itself is but a covered bridge,
Leading from light to light, through a brief darkness.”

Died, on the 14th July, aged 35, Mr. C. E. Ashworth, of Holywell. He graduated in 1843.

On the 26th July, aged 35, Mr. W. Phillips, of Monk's Eleigh. He graduated in 1846.

Also, Mr. J. Stoddart, of Whitehaven, who graduated in 1839.

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Communications and Case .

CLINICAL LECTURE ON DISLOCATION OF THE
FEMUR.

By JOHN GAMGEE, M.R.C.V.S.

Professor of Anatomy and Physiology, and
Clinical Lecturer in the Edinburgh Veterinary College.

From Notes by Mr. WILLIAM ALLEN FIELD, Student.

(Continued from p. 500.)

THE incomplete dislocations of the femur, when recent, are more simple to manage than cases like the one we have observed in Mr. Cairn's dairy. But, for all this, though the head of the femur may be just over the brim of the acetabulum, it is surprising what immense power and appropriate contrivance is required to effect reduction. I shall now read you the history of a case of this kind.

During my residence, in 1854, in the Imperial Veterinary College of Lyons, a low-bred gray horse was brought into the infirmary with a dislocation of the right hip joint. On the 30th of October, he was being driven in double harness, and sharply made to turn by a sudden and energetic pull to the right. Unable to move any further, the off hind limb having been seriously injured, the horse was set free, and made to limp on three legs to the college. The leg could not be drawn forwards, except partially in describing a semi-circle outwardly. When quietly standing some weight was borne by it, in the position shown in the accompanying sketch that I made at the time. The toe was twisted outwards, the stifle slightly turned inwards, and the trochanter

major was much more prominent than in the natural state, and with a striking depression behind it. (See fig. 1.)



Fig. 1.

The movements of flexion and extension were much impeded and associated with great pain. The whole limb appeared slightly larger than in nature, but the difference was not readily ascertained, as the pastern of the opposite limb was preternaturally flexed, as seen in the above figure. This was due to defective conformation, but likewise to more weight than usual falling upon it. No crepitation or other signs of fracture existed, and the diagnosis of dislocation of the femur was readily arrived at. The head of the

bone was recognised as situated on the brim of the acetabulum. Considering that the round ligament must be torn asunder, the prognosis was unfavorable. Thrice was an operation attempted for its reduction. At the third I was present, and M. St. Cyr succeeded, with the assistance of myself and twenty students, to get the head of the femur back into the acetabulum. To effect this, a long piece of webbing* was passed round the abomen, another between the thighs, catching the pubis, like I did in the cow, with the breeching; other two portions of webbing were fixed to the lower part of the limbs. All hands were ordered to pull steadily, and the students that pulled directly on the leg moved alternately forwards and backwards, when in moving forwards, exerting great force at the time, the dislocation was reduced with a distinctly audible smack. The horse was let loose; he quietly rose, could use his limb, and was led to his stable.

This horse would most probably have been cured had the owner not been allowed to remove him from the infirmary on the 3d of November. The poor animal was put to work immediately, and, as a natural consequence, the luxation recurred. He was brought back to the college, and, through the kindness of Professor Rey, I obtained him for the purpose of instituting an experiment on pyæmia. He died from the experiment, on the 23d of November. I had injected pus in the mesenteric veins, and produced multiple abscesses in the liver.

On dissecting the hip-joint, I found all the tissues around involved in inflammation. The acetabulum was filled with pus. The round ligament was torn asunder, and the portion of it attached to the round bone enlarged and softened. The capsular ligament was lacerated, and the head of the femur rested on the anterior part of the brim of the cotyloid cavity. The head itself was partially absorbed, a groove having been formed; in it was lodged the iliac portion of the acetabulum, which was itself considerably rubbed down.

This case, gentlemen, contrasts with that of the cow, in that there was no need for the operator to attend to the drawing the head of the femur outwards. It simply had to be made to roll off of the prominent ridge limiting the socket. I wish you to observe the number of men that were required to overcome the powerful glutei. You must not run away

* Webbing about two inches wide is constantly used in France, instead of the accessory leather straps that we are accustomed to, in fixing limbs, when a horse is cast; and from its general usefulness, easy adaptation, and nice texture, I vastly prefer it to ready made leather tackle, or more clumsy rope.

with the idea that because I only had eight men to the cow, that therefore I brought less strength to bear.

The fixed point to which the breeching was attached more than compensated for ten men, it being sufficiently strong not to yield to the immense traction exerted. I should always recommend such a plan if practicable. There is no farmhouse where you cannot make a bed of straw near a tree or post, and from a stout branch of the former might be suspended a rope to operate as the fulcrum if needed; but I repeat, that the carrying out the principle in practice, under very varying circumstances, must be left in a great measure to the skill and ingenuity of the operator.

I wish, in the next place, to draw your attention to sources of fallacy in the diagnosis of these hip-joint dislocations, and to certain lesions that may occur secondarily. There are certain injuries of the femur, of the acetabulum, and of their connecting ligaments, the precise nature of which can with difficulty be made out. A very accurate examination of the parts, compared with the normal condition, is required, and more especially with reference to the obliquity of the femur, to the flatness or hollow aspect of the thigh in front of this bone. Dislocations of the femur may be mistaken with fractures of the neck; or of the upper part of the shaft of the same bone. The accompanying drawing of a specimen in the Museum of Bologna, shows a fracture of the neck of the femur in a cat. The head of the bone was never displaced, but a false joint was formed at the seat of injury. Such a fracture, with displacement, especially if it occurred in a large quadruped, might present many of the signs of luxation, but the shortening of the limb, and the grating that is so readily discovered, constitute diagnostic symptoms.*

* Two days after I had delivered the above lecture, Mr. Cairn's cow died, apparently from an attack of indigestion. I performed a post-mortem examination, and discovered that the ligaments of the joint had all given way, were partially softened by inflammation, and the acetabulum was filled with semi-organized lymph. The head of the femur was, as I had at first diagnosed, in the obturator foramen, but, to my astonishment, was detached from the body of the bone. Clotted blood, in abundance, surrounded it, and thus a large tumour was constituted, which projected into the interior of the pelvis. I carefully observed, what might prevent me obtaining evidence of fracture in the first instance. Under the then existing circumstances, the broken portions of bone could not be brought in apposition owing to the head entering deeply into the obturator foramen. Bony grating was the only sign that could have been relied upon in the diagnosis of fracture, but the ready displacement after reduction, and the apparent possibility of spontaneous return of the head of the femur into the acetabulum, assured me of a complication the nature of which I had at first doubted as injury to the acetabulum itself. I spoke, in my lecture, of the

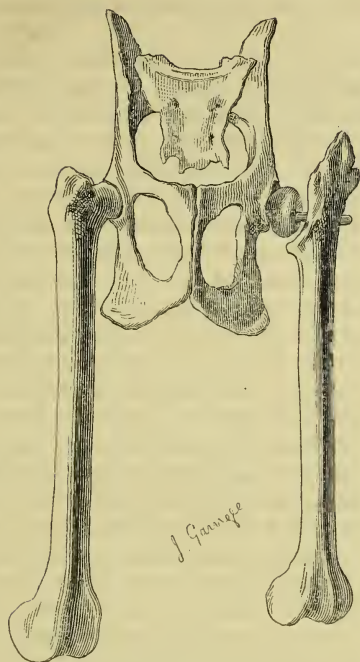


Fig. 2.

The head of the femur, in man, may fracture within the acetabulum, and is termed an intracapsular fracture; an injury which, so far as I can ascertain, has never been seen in animals.

It is due to fragility of bones, and rigidity of joints, and the exciting cause is often insignificant, such as a slip or a fall.

When the ligaments are ruptured, as they are more or less invariably, the parts are never absolutely restored to their pristine condition. Yet the animals may go sound. Often, as you see in the pelvis I hold in my hand, the cartilage of incrustation disappears both from the head of the femur and acetabulum. The bony surfaces exposed to friction acquire a hard, brittle, shiny aspect, due to an increased deposit of bone earth, and this transformation is termed *eburnation of bone* or *porcelainous deposit*. This is more often

case of dislocation as interesting, in showing the value of the method of reduction; it is now doubly so, as it was an instance of a singularly hidden condition of parts hitherto undescribed.

seen in the stifle joint, and induces stiffness if not absolute lameness.

Laceration of the capsular ligament, and injury to the brim of the acetabulum leads to the formation of bony spicula that interfere with the motion of the joint. It is important to remember that when once the round ligament is completely severed, nothing will cause it to reunite; it gradually becomes atrophied and disappears.

Gentlemen, I must now solicit your attention to a few historical observations. For the scarcity of records relating to this important class of injuries, I account by the fact, that the lesions are generally, but often without sufficient reason considered too extensive, or that methods of treatment are looked upon as excessively tardy in effecting a restoration of parts; so that it is esteemed best to put the animal out of its misery, and then no more is heard of the case. But it should be borne in mind by you, that it is your duty to form as accurate a diagnosis as possible before thus condemning a patient, and that any important facts which may afterwards be revealed on dissection should be investigated, with a view to determine for future guidance, whether there had existed any possibility of cure. Since Vegetius wrote, in the fifth century, his chapter on "*Misera Coxa*," for his *Artis Veterinaire*, scanty are the observations that have been contributed to the history of dislocations of the femur. One instance is recorded by Schreider.* The parts were examined seven weeks after the accident. The cartilage of incrustation was quite removed from the head of the femur and acetabulum; the round ligament was torn, and the cotyloid cavity already tolerably levelled down; bony spiculæ had also formed in several parts. Gohier, of Lyons, was the next veterinarian to draw special attention to rupture of the coxo-femoral ligament; but the case that has of all others thrown more light on the subject, was published in the *Recueil de Médecine Vétérinaire* for 1829. It was recorded by MM. Saussol and Rausou, Veterinary Surgeons to the 18th Regiment of Chasseurs, and the injury occurred to a troop-horse that fell with another over him. On rising again, he was observed to stand on three legs, the fourth having been seriously hurt. The left femur was luxated, and the head had been drawn downwards and inwards, so that the limb was turn outwards, was about an inch longer than its fellow, and the foot could only touch the ground on the inner quarter. Reduction was attempted; and at first, efforts were made to draw the head of the femur outwards by one

* Busch's '*Zeitschrift*,' third series, vol. iii, p. 31.

hand being passed under the upper part of the bone, whereas pressure was exerted with the other on the lower end, and forcible counter-extension at the same time employed. These means were ineffectual; but on moving the parts, a crackling noise was heard, which inspired fears as to the existence of a fracture of the neck of the femur. In a note appended to the above case, a very just opinion is emitted by the reporters, that the crackling was due to rupture of some fibres of the round ligament, or to friction of the head of the femur against the margin of the acetabulum. The round ligament was probably severed at the time of the accident, or that some of the fibres of the capsular or pubio-femoral ligament might have been tearing; this is a conjecture of M. Yvart, one of the then editors of the *Recueil*.

The above dislocation was ultimately reduced by using a pail between the thighs as a fulcrum. A mustard poultice was applied to the hip joint, with a view to induce a tumefaction, and diminish the chance of recurrence of the dislocation, and as a preventive against inflammation of the joint. The horse gradually, but completely recovered, and now serves as an example to show that in cases of the kind, and like the one I witnessed in Lyons, a veterinary surgeon should not despair.*

Percivall in his 'Hippopathology,' quotes a case related by a Mr. Feron, who "with unexampled difficulty and trouble" succeeded in reducing the dislocated bone; the actual cautery was applied on the joint, a dressing of tar, spirits of wine, and vitriolic acid, was afterwards used. The horse was after this turned out. In four months "he could get up himself, and walk tolerably sound; though at the trot he was still lame. But at the expiration of twelve months, he was perfectly sound in all his paces, and remained so."

I have next to refer to a memoir published in September of 1855, in the *Turin Veterinary Journal*. Its author, Antonio Bossetto, records no less than seven cases of hip-joint dislocation, that merit our special attention. The first occurred in the month of May, 1837. The patient was a cow, and it was the left hip that was injured. Appropriate measures were adopted, and the dislocation reduced; but the owner, led away by two empirics, suffered them successively to treat the case, and under their care the accident recurred. Bossetto bought the cow for experiment, eighteen days after

* In revising Mr. Field's notes for publication, I have somewhat enlarged on the historical facts, to be more comprehensive in print. Otherwise, it has been my special desire to restrict myself to what I orally mentioned.

the first mishap, and again reducing the dislocation, by appropriate means restored her to a sound condition, and besides retaining her five years in his own possession, though she changed hands several times afterwards, he saw her alive and pregnant in the autumn of 1853. The cow was in calf at the time of the accident, and twenty-five days after Bossetto had purchased her she was delivered of a healthy calf.

The second case was a most striking one of dislocation of both hip-joints, in a cow that met with the accident somehow while grazing. It occurred in the autumn of 1839. Both luxations were reduced in the field, and the animal, with difficulty got on her legs again, was made to walk to a stream of water, and the joints were bathed for more than half an hour. Other accessory remedies were used, and the cow was speedily restored to health.

The third instance occurred in a bullock, in the month of May, 1843. The right hip-joint was displaced. It had been falsely diagnosed by an empiric, but Bossetto with difficulty reduced it, and the animal rose from the recumbent posture, gave evidence of a keen appetite, and in forty days from the accident was perfectly recovered, and could again bear the yoke.

The fourth case was one in which Bossetto had diagnosed complete rupture of the round ligament, and he would not undertake the treatment. The cow was eventually destroyed.

The fifth was also in a cow, but the hip-joint dislocation was associated with fracture of the pubis, so that Bossetto condemned the animal to be slaughtered. Two other cases of the same kind are alluded to, and Bossetto concludes his memoir with some practical inferences especially bearing on the curability of such lesions, on the simplicity of management or after treatment of the case, and on the inutility of using slings to support the patients, or plaisters and charges over the affected joints.

Of the many opinions that I obtained from professors on the continent, none were more to the point on hip-joint dislocations than those of Dr. Gotti, of Bologna, and Professor Maffei, of Ferrara. These gentlemen combine immense experience with sound judgment, and their evidence bears strongly in favour of attempting reduction at all times when the femur is displaced without very extensive complication.

In conclusion, gentlemen, I beg you to reflect how essential it is to acquire a complete knowledge of the nature of injuries, so that when called upon to treat them, you may at all times have that confidence in yourself which you must in-

spire in others; especially as the adoption of the simple therapeutic methods sometimes calls for an extra share of patience on the part of those who cannot see the value of "doing nothing."

CASE OF RUPTURED STOMACH.

By ALFRED WALKER, M.R.C.V.S., Rugby.

ON Wednesday, August 13th, 1856, I was called in shortly after 6 a.m. to attend a valuable hunter, six years old, the property of Mr. Darby, of this town. On the Sunday previous he had an ordinary dose of physic (3iv aloes), which had acted well, and the bowels had assumed their natural condition. On Tuesday night he was fed as usual with corn and hay, and appeared in perfect health. During the night he ate up all his food, but on the groom going to give him his feed of corn of Wednesday morning, he noticed something about him which made him suspect he was not "quite right," he therefore sent for me to see him.

I saw him in an hour after, and found him trembling violently; his whole body bedewed with perspiration, which was dropping off him; pulse 70; a peculiar jerking kind of breathing, and increased to 50 per minute; the head extended, and the upper lip frequently curled; the extremities cold, and visible mucous membranes injected; he stood in one position, as if afraid to move, and alternately rested his legs. I administered a sedative draught, although, from the suddenness and violence of the attack, I had but little hopes of his recovery. I saw him again in an hour after, and found him much the same, still exhibiting no inclination to move, and the body had become tympanitic. My diagnosis now was, that rupture of some of the abdominal viscera had taken place.

The animal continued much the same until an hour before his death, when he evinced symptoms of uneasiness, by slightly pawing and moving round his box; he shortly after became insensible, and at 1 o'clock the same day fell down and died.

Post-mortem examination.—On laying open the abdomen, a quantity of gas and fluid feculent matter escaped. The intestines were laid back to examine the stomach, which was much distended with food, and on the surface of this organ was

a considerable quantity of solid ingesta, which had escaped through an opening four inches long and two wide in the mucous coat, and fourteen inches in the muscular and peritoneal coats.

I have forwarded the above case, should you deem it worthy of insertion in your Journal, as differing somewhat from those symptoms generally described, inasmuch as the animal never laid down, made no attempts at vomition, nor exhibited that marked symptom of sitting on the haunches usually met with in these cases. It also shows the necessity of regulating the animal's food after a dose of purgative medicine, for there is but little doubt that from the nauseating effects of the physic having passed off, and the animal's appetite returned, he had partaken somewhat ravenously of a large quantity of food during the night, causing over distention of the stomach, which by some sudden exertion on the part of the animal had become ruptured.

OSSIFICATION OF THE HEPATIC DUCT OF A COW.

By J. F. SHAW, M.R.C.V.S., Derby.

DEAR SIRS,—I enclose you a morbid specimen, which I think may be interesting to you, particularly when taken in connection with the symptoms which presented themselves previous to death, which I will hastily sketch for you to make what use of you please.

Being in attendance on a mare, at Burley Farm, on the 24th ult., my attention was directed to a slight disease existing in the udder of a cow, the gland being very tender. The cow had been bought but a few days before, and was said to have calved about three weeks ago. She gave but a small quantity of milk, and was low in condition. With the exception of the udder, she did not appear to be labouring under any disease. I gave her an aperient draught, and had some camphorated ointment rubbed over the mammary gland night and morning, when she then appeared to be getting well; but on the 30th they sent to say that she was very ill, and the bowels constipated. I forwarded a strong purgative, which was given to her at night; and the next morning early, I went over to see her, and I must confess I was puzzled what to make of her. The pulse was low, the membranes pallid,

the ears, legs, skin, mouth, and even the tongue, very cold; the eyes dull, and her head resting on the straw. I gave her stimulants internally, and also used them externally on her back and sides; and had her clothed well up. She, however, died early in the afternoon.

On a *post-mortem examination*, I found nothing at the first glance to account for death. I had been prepared for intense hemorrhage. There was slight adhesion of the lungs on the near side; the internal membrane of the abomasum was likewise slightly inflamed, as was also that of the uterus; all the stomachs and intestines were full of food; the gall-bladder was distended with bile, and the liver appeared to be healthy, but on cutting into it I at once found what appeared to me to have been the cause of death, namely, ossification in the interior of the hepatic duct, which entirely prevented the passage of the bile. I have sent you a small portion of the duct, but there were parts which were completely closed.

The most extraordinary feature in the case, in my opinion, was the perfect absence of discoloration of the membranes, &c., by the bile.

I am, yours truly.

To the Editors of the 'Veterinarian.'

[The specimen sent to us by Mr. Shaw is unquestionably an interesting one, being, as described by him, an ossification of the walls of the hepatic duct, and that to such an extent as to render it nearly impervious; yet we can hardly consider this to have been the only cause of the somewhat sudden death of the animal.]

CASE OF INTUSSUSCEPTION OF THE ILIUM OF A HORSE.

By R. H. HOLLOWAY, M.R.C.V.S., V.S. 2d Madras L. C.

SHORTLY after I had visited my hospital, on the morning of 12th June, a horse of the C troop, regimental number, 1789, was observed, while at his picket in the horse lines, to evince some uneasiness. He was forthwith removed to the sick-lines, and clysters were given him, after which he had a healthy evacuation of the bowels, and subsequently micturated. When there, the horse did not show any sign of pain or indisposition, so the usual report of the admission was not

made to me. As he remained quite easy up to half-past 4 p.m., the farrier-major was about to discharge him, when symptoms of spasmodic colic manifested themselves. It appears this was about half an hour after he was watered. Enemas were repeated, and the following draught administered :

R. Ol. Terebinthinæ, fʒiij ;
Pulv. Opii, ʒj ;
Aquæ Tep., fʒxij.

At evening stables, I went, according to custom, to the sick-lines, when my attention was immediately directed to the horse in question. The symptoms were urgent, and demanded antiphlogistic measures.

I ordered a copious venesection at once, from the jugular vein, and prescribed—

Aloës, ʒvjss ;
Ginger, ʒij, in bolus.

The pain continuing, an hour afterwards a blister was well rubbed over the surface of the abdomen. At intervals the horse was restless, lying down and rolling, then rising and looking to his sides, which continued more or less until 2 o'clock a.m. of the 13th.

I visited him early on that morning, and found him in a hopeless state. His ears, muzzle, and legs were deathly cold ; the buccal membrane of a livid hue, and the mouth dry. Some of the contents of the stomach were escaping from both nostrils. His eyes looked wild and anxious. He was quite pulseless at the jaw, and there was continual sighing and grinding of the teeth. He was perpetually shifting about, and anxious for water, but unable to swallow it. I at once came to the conclusion that there was strangulation of the intestines, and my prognosis, accordingly, was an early death. At a few minutes before 9 o'clock on the same morning he suddenly fell down and expired without a struggle.

The *post-mortem examination* disclosed intussusception of the ilium, two yards and a half of the *anterior* portion of this intestine, with a considerable portion of the mesentery, being thrust into the posterior portion, and had become so firmly imbedded, that it required no ordinary degree of force to withdraw it. The coats of the part of the intestine involved in the stricture were, from effusion, excessively swollen and tense, and in various stages of inflammation, running on

to gangrene, and one portion was in a state of complete mortification. The stomach was gorged with ingesta. The duodenum and jejunum were likewise distended with food. The posterior portion of the ilium, beyond the invagination, was quite empty.

JAULNAH; *July* 25, 1856.

DISLOCATION OF THE OS SUFFRAGINIS.

By J. D. PEECH, M.R.C.V.S., Wentworth.

A VERY strong hunter, up to fifteen stone, the property of a nobleman, was turned out into a loose box and spacious yard. The groom in attendance went at the regular hour to feed him, when, as soon as the box door was opened, the horse trotted into the yard, and rushed against the entrance gate, which gave way, and allowed of his escape. He then loped upon the pavement, and fell with great violence on his near quarter, the foot and leg being bent under his body. On rising, which he did immediately, a frightful injury was discovered to have taken place, viz., complete dislocation of the os suffraginis, together with laceration of the external lateral, long inferior, short inferior, and crucial ligaments. The sesamoides were torn asunder, and the inferior extremity of the metatarsal bone came in contact with the ground. The integument covering the lateral part of the fetlock-joint, having been cut through, its articular surface was very much abraded; the foot was turned to the inside, the only connection remaining being the internal ligament, tendons, and integument.

Humanity dictated his destruction, which was immediately carried into effect.

AN ATTACK OF PNEUMONIA, FOLLOWED BY TRISMUS, IN A MARE.

By J. AUSTEN, M.R.C.V.S., Exeter.

JULY 13th, 1856, I was requested to attend a mare belonging to Mr. Snow, farmer, &c., of this place.

History.—The animal is of a bay colour, of the light-draught breed, five years of age, stands about fifteen hands high, bred by the present owner, and has always performed her work cheerfully. The man who had the care of her informed me that she had coughed frequently for several days past; but beyond this nothing more was remarked. This morning, however, one of Mr. Snow's men employed on the farm went into the field and found the mare exhibiting symptoms of serious illness, when I was soon requested to attend. The mare in the meantime had been led into the stable.

Symptoms.—When I arrived, the animal was standing in the stable, looking anxiously round to her sides; the whole body seemed stiff and sore; every now and then she coughs violently; the breathing is quickened and laborious; the legs, ears, and muzzle, are intensely cold; convulsive twitchings affect the neck, &c.; the mouth is cold and pale, and the pulse 90 in the minute.

Treatment.—This consisted at first in bleeding freely, hand rubbing the extremities, then bandaging them, and warmly clothing the body, after which I administered the following:

℞ Magnes. Sulph., ℥iv;
Aloës Barb., ℥ij;
Pulv. Ginger, ℥ij, in haustus.

I backraked her, and threw up an enema of thin gruel; I also blistered her sides and chest, and inserted a rowel between the forelegs.

July 14th.—This morning, on entering the stable, I perceived that the bowels had been gently acted on, but her breathing was still very short, and the mare was looking anxiously about her, and at intervals she coughed violently; pulse 68; respiration 20. I abstracted four quarts more blood from the jugular vein, and gave the following in the form of ball:

℞ Antim.-Potass.-Tartrat., ℥iiss;
Potassæ Niträt., ℥ss;
Pulv. Digitalis, ℥j;
Mellis, q. s.

The blisters not having taken any effect, I repeated them to the sides, chest, and nearly the whole extent of the trachea, adding a little potassio-tartrate of antimony to the ointment. On again visiting my patient, at 10 o'clock at night, I found her considerably relieved. The extremities were warm, the breathing more tranquil, and the pulse lowered; the blisters

also had excited the desired action, and the rowel was discharging a little. I repeated the ball as in the morning, and left her for the night.

July 15th.—I visited my patient early this morning. There was considerable effusion underneath the belly, brisket, sides, &c., and the rowel was discharging copiously. The breathing was more tranquil, but the mare seemed to be suffering very acute pain. She kept moving her head to and fro, and every now and then shaking it, showing much uneasiness. At times she would cough violently. I gave her, in the form of a draught—

℞ Antim.-Potass. Tartratis, ℥ij;
 Camphoræ, ℥ij;
 Potassæ Nitratis, ℥ss;
 Oxytel. Simplicis, ℥iv;
 Decoct. Avenæ Sem., Oj. Misce.

On visiting her at 11 o'clock at night, I was somewhat alarmed, when, being about to administer a draught as in the morning, I found the masseter muscles rigid, likewise the muscles of the neck as far back as the withers; and on gently raising her head, the membrana nictitans was protruded partly over the eye, and the jaws were partially closed. I however succeeded in giving her the greater part of the medicine. I then applied a blister over the larynx and posterior part of the head, including the masseter muscles, &c., and left my patient under the care of two attendants. I considered that those symptoms of trismus might be occasioned by a morbid irritation of some part of the nervous system.

16th.—This morning my attendants informed me that the animal had been very restless and uneasy until about 3 o'clock in the morning, but soon after that time she seemed much easier, and swallowed a bran mash, with some linseed tea, gruel, &c.

On examination, I found the masseter muscles quite relaxed, likewise the muscles of the neck, &c.; she could also open her mouth with ease.

℞ Spt. Ether. Nitric., ℥ij;
 Liq. Ammonia Acet., ℥iv;
 Decoct. Avenæ Sem., Oj. M. fiat haust.

I dressed the rowel, which continued to discharge very much. Heavy bronchial sounds could be heard at intervals. On again visiting her at night, I was not a little surprised to find that, unknown to me, another practitioner had been called in, who prognosticated an unfavorable termination to

the case, from the blood-letting having been carried so far. This I heeded not, but repeated the spirit of nitric ether, with solution of acetate of ammonia, adding a little gentian and ginger.

17th.—This morning I found my patient considerably better. She was breathing stronger, the pulse regular, the extremities warm, and she was also looking more cheerful. Ordered the draught to be given morning and evening.

On calling again in the evening, I was informed that she had partaken of a pailful of scalded oats and bran, mixed with infusion of linseed, likewise a little half-dried grass.

18th.—I was pleased to find my patient much improved; the appetite and strength were increasing, and she ate and drank heartily to-day. I continued to give her diffusible stimulants, combined with gentian and ginger, morning and evening, as before.

19th.—She continues to improve, and evidently gains strength; the appetite has increased, and she looks cheerful. I added half a pint of warm ale to the medicine and gruel.

20th.—She seemed so cheerful this morning that I ordered the attendant to walk her gently about the field for a short time, when she appeared so very anxious to have a mouthful of grass that a little was allowed her. She has eaten very heartily of bran and oats mixed with linseed tea—her ordinary diet.

22d.—The attendant informed me this morning that she had coughed again several times during the early part of the night, and also in the morning. I gave her the following:

℞ Ferri Sulph., ʒj;
 Pulv. Gentianæ,
 Pulv. Cort. Querci,
 Pulv. Flor. Anthem., aa ʒiij;
 Decoct. Avenæ Sem., Oj. M. fiat haust.

23d.—The mare is still improving. She does not cough so frequently. The appetite is now very good. She will eat a little hay and grass mixed, which she seems to relish very much, but I allow her only a moderate quantity at a time. Repeat the tonic medicine.

I continued the tonic medicines up to the 28th of July, the mare evidently improving every day, and on the 30th she was discharged, apparently quite well. She is now allowed to graze in the field by day.

DIFFICULT CASE OF PARTURITION IN A HEIFER.

By C. LAYCOCK, V.S., Hirst Courtney, near Selby.

ON the 20th of April, 1855, I was called to a heifer, the property of the Misses Schothrope, of the Manor House, Temple Hirst. On my arrival I found I had a very difficult case of parturition to contend with. The animal was in a very delicate state of health, in fact, a walking skeleton, and endeavouring to part with a dead calf, the vagina being contracted so as only to admit of two fingers. My patient being so much reduced, I did not think it a proper case to attempt the Cæsarian operation, but, with the aid of instruments, I tried to deliver her by embryotomy, in which I failed. On close examination I found the os uteri so small that I could not pass anything up it; I therefore persuaded the owner to leave the animal to nature, watching her in case of any assistance being required. The parturient pains gradually abated, and at length altogether ceased, until the 1st February, 1856, when I was again sent for, and found my patient much the same as on the 20th of April, 1855, with the exception of the fœtus being in a putrid state, so much so, indeed, as to be almost past approaching. I then again attempted to do what I could not accomplish before; viz., to deliver her by embryotomy, and, after much patience and perseverance, I effected my object, yet not without encountering a great deal of difficulty. In the first place I had to break the skull into several pieces, each piece to take away separately, and, in fact, every bone of the body, keeping a correct account until I got out the whole. With proper care and attention, my patient recovered, and was sold to the butchers a few days ago, of whom I inquired if anything particular was observed in the uterus? when the party who killed her informed me that everything was quite healthy, and, apparently, natural.

SOME ERRORS IN THE DIVISIONS OF THE BONES AS GIVEN IN PERCIVALL'S ANATOMY.

By J. J. LUPTON, Student of Veterinary Medicine R.V.C.

DEAR SIRS,—In studying the bones, I have been struck with several divisions of parts of bones which Percivall has made which I think improper, especially in the humerus. For instance, he divides the condyles by an eminence. Now an eminence, in an extremity, should fit into a concavity in the bone it articulates with, but it happens differently; there are two eminences on the radius which fit into two canals in the humerus.

Mr. Percivall also mentions two scabious fossa. It seems to me to be a canal, and I have, therefore, called it *Scaber Canalis*.

I have called the deep ovoid fossa, mentioned by Percivall, the piscina, because it so forcibly reminds me of the piscina which you may now see in all the churches built before the reformation. It consists of a basin placed in an excavation in the wall, just by the altar table. In this piscina the priest used to wash his hands.

The accompanying paper will explain itself. I have put the derivations to many of the words. I beg you to pardon this egotistical letter, and do not deem me presumptuous, since I send it in all humility; thinking that remarks which carry some truth with them will be received just for what they are worth.

I remain, dear sirs,

Yours truly.

THE CLOISTERS, WESTMINSTER;
Sept. 6, 1856.

The Humerus.—(*Latin n.*, signifying the shoulder).

Situation.—Between the scapula (*L. n.* blade-bone), and the radius and ulna; whereby an angular space of considerable extent is left between the two bones.

Form.—Cylindroid; presenting the appearance of having been twisted on itself.

Division.—Into a body and two extremities.

Body.—Angular; with expanded, flattened sides, contracted and rounded inferiorly. From its outer, fore, and upper part, projects the tuberosity (from *L. n.* tuber, a swelling). From the tuberosity, proceeding inwards, forwards, and downwards, is a slight eminence, which terminates in a

scabrous canal (scaber canalis), placed at right angles to it, at the antero-inferior part of the body of the humerus. The outer side is excavated and smooth; the inner rather prominent and roughened, and presents a small scabrous eminence,—the scabrum tuberculum (dim. of tuber, a little swelling). Lower down we have the medullary foramen, direction downwards.

Superior Extremity.—Larger than the inferior; it has a head and four tubercles. The head is the hemispherical, smooth part projecting posteriorly; it articulates with the glenoid process (from *Greek* *n.* Γληνη, the socket of a joint), which it much exceeds in extent of superficies. Into the irregular indented groove by which the head is surrounded is fixed the capsular ligament (from *L. n.* capsula, and dim. of capsula, a chest); anteriorly, the head is surmounted by four tubercles. Three directly in front are anti-articular; they have between them two smooth grooves, which, as well as themselves, are covered with cartilage. They serve as a pulley for the flexor brachii tendon to play over. The outer articular tubercle is joined by a protuberant ridge with the tuberosity. The fourth or outer tubercle serves to guard against dislocation.

Inferior Extremity.—Displays a specimen of diarthrodial or pulley-like articulation (from *Greek*, διὰ, through, and αρθρον, a limb). It consists of two condyles, (*L. n.* condylus, a knuckle) separated anteriorly by a canal (canalis condylorum), which commences at the scaber canalis, slightly and gradually increasing in depth and width, until it abruptly terminates at the posterior part of the bone, in a deep ovoid fossa, the piscina or pond, into which the olecranon (ωλενη, ulna, and κρανον, the head), is received. On the inner and outer sides of the condyle, we have two processes like the sides of a drum. The outer is concave, forming a sort of cup-shape, and porous; the inner is slightly convex, having a foramen in its centre. These, for the sake of distinction, might be called the tympanoid processes, (from *Greek*, τυμπανον, a drum, and ειδος, like). The outer condyle is the largest, and projects more behind and before than the inner. The inner condyle, the smaller, is divided by a canal (canalis condyli), running parallel to the canalis condylosum. The condyles meet at an angle above the piscina, and there run into union with the bone.

In the young bone, the head, condyles, and tubercles, are epiphyses. (Επι, upon, φυιο, I grow).

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 530.)

ECTOPIA CORDIS—continued.

MOST of the facts recorded in Alessandrini's case, of which I gave a brief account in my article for September, are common to all cases of thoracic displacement of the heart. A very similar account was given of an instance of the kind by Hering, in the *Repertorium* for 1849.* The calf was delivered by a cow that had the year before given birth to a fine well-made animal. The subject of this ectopia was of the middle size and regularly developed, except as to the position of the heart and a deformity consisting in permanent flexion of the off fore fetlock, that prevented its assuming the erect posture, notwithstanding repeated attempts so to do. But it mostly lay quiet, had a lively look, and gave no evidence of suffering, although the heart was exposed to the atmosphere and laid in contact with straw. To prevent this, a linen bag was made to protect the heart, and kept constantly moist with lukewarm milk. About half a gallon of warm milk was the daily nourishment, which the calf freely sucked out of a bottle provided with a cork nozzle.

The appearance of the tumour formed by the heart was precisely that described in Alessandrini's case, and Hering says there was no pericardium. Some fresh cases are required to prove, correct or otherwise, the conjectures of Alessandrini, that the pericardium is generally to be discovered, but closely adhering to the substance of the heart. The first day, on the right side, was seen a tolerably large lymphatic vessel filled with clear lymph. "The heart pulsated tolerably regularly; the contractions of both ventricles appeared simultaneous, and were very distinct; much less evident were the contractions of the auricles; these cavities, and especially the right, seemed to be always full, and to remain almost without contraction. At no time was

* 'Beschreibung eines Kalbes mit freiliegendem Herzen (Ectopia cordis),' von E. Hering.—'Repertorium der Thierheilkunde,' p. 79, 1849.

the alternate contraction of the auricles and ventricles to be observed. The contractions of the heart resembled an undulating or vermicular movement. The left ventricle contracted most powerfully. On the first day the pulsations were 150 in a minute. On the second day, whilst the animal was more quiet, the pulse was only 108, and the respirations from 52 to 60. If disturbed, the pulse rose to 144 or even 160 beats. A weight of two pounds was raised easily from the surface of the heart, by its contraction, and did not seem to impede its movements." In attempting to ascertain the strength of the impulse or spring of the cavities of the heart and the temperature of the blood in both ventricles, the calf died, on the 15th of May, or the tenth day from its birth.

Another case of thoracic ectopia cordis was described by Hering in the third number of the *Repertorium* for last year. The calf was born on the 23d of March, 1855, and though it gave evidence of life during delivery, it never drew breath. Hering is very distinct in saying that there was no trace of pericardium. Other anatomical details bear a close analogy to those already mentioned above.

Gurlt, in his 'Pathological Anatomy,' refers to two cases in puppies, observed by Regis; the heart laid exposed so that its movements could be seen; the one dog lived twelve hours, and the other more than a day. Gurlt speaks of them as cases of division of the chest, under the head *Schistocormus fissisternalis*. In the museum of the Berlin Veterinary School there are preparations from a calf and a lamb affected with cardiac ectopia. The pericardium is said to have been absent, as in all these cases. The calf died soon after birth, but the lamb lived four hours, and sucked its mother.

Of the external thoracic displacements we have further: "One observed by Martinez, in a fœtus born at Madrid, 1706, and described by Haller ('Disputat. Anat. Select.') The heart, devoid of pericardium, formed a muscular and compact mass in front of the chest, its apex being directed forwards, and its base backwards. It performed its alternate systole and diastole very vigorously; during the latter it became oblong, whilst in the former it acquired an almost rounded form. The hand pressed on the heart for a short time interrupted the systole and diastole, but when removed the organ gradually resumed its action. A prolonged pressure considerably increased the rapidity of the respirations. The sternum was divided along its whole length.

"In 1745, a child (of full time) was born in Prussia with the heart external to the chest; with the exception of this it was well formed and in good condition. The heart had no

pericardium; it was wider at its apex than at its base; its direction was vertical; its right side looking forwards, the left backwards. The right auricle was larger than the left. The dissections of Weese showed that there were two superior cavæ. The azygos vein opened into the right. The right auricle received the right superior cava and the inferior cava, whilst the left received the left superior cava and the pulmonary veins. The foramen of Winslow was still patent, and an imperfect septum ventriculorum allowed free communication between those cavities. The pulmonary artery arose from the right ventricle, but the aorta took origin from both ventricles. The child lived from thirty-six to forty hours." (Walter, 'Mus. Anat.')

Büttner describes a case ('Anatom. Wahrnehmungen,' Königsberg, 1768,) which occurred in a female infant; the heart was broad instead of pointed at the apex; the trunks of the great vessels were larger than usual; a soft cuticular ring formed of smooth thin skin surrounded the heart at the point of junction with the sternum; the pericardium was entirely wanting.

"In vol. vii of 'Act. Helvet.' may be found a case related by Sandifort. The heart, devoid of pericardium, had its base directed downwards, and its apex upwards and to the left side. No other deformity existed. The child lived more than a day. The greater part of the left, and the whole of the right auricle might be seen externally. The contraction of the heart was rather vermicular than vigorous. After death the sternum was found entirely absent, and the fossa in which the heart was lodged was formed by the intercostal muscles, covered internally by the pleuræ, and externally by integument."

"Cerutti (Geoffrey St. Hilaire) had a case of this form of ectopia, differing, however, from the preceding cases, in that it presented several other deformities. The heart had left the thorax through a fissure caused by the absence of the ensiform cartilage, and of the left tenth rib; its base, deeply bifid, was directed downwards, and its apex was turned upwards, and had become united by adhesion to the cranium. Several other remarkable anomalies existed."

A specimen is preserved in the museum of the Vienna School, and another is mentioned by Hering, as observed by a veterinary surgeon of the name of Hinkelmann. Both subjects were calves, but the cases, being associated with partial opening up of the abdomen, belonged rather to those instances of complete division of the parietes of chest and belly with retroversion and exposed state of all the thoracic and abdominal viscera.

The last instance of external thoracic displacement of the heart that I have to mention is one related in the sixth volume of the 'Transactions of the Pathological Society of London.' The specimen exhibited to the Society had been removed from a child supposed to have been *in utero* eight months; this child was a male; it presented no other deformity, and lived thirteen hours after birth. The case occurred in the practice of Mr. Bayne, of Poplar.

"The heart, devoid of pericardium, is of a conical shape, with a somewhat truncated apex; the direction of its axis is normal, though situated in a place a little below that which it would have occupied in its natural position within the chest. The groove separating the auricles and ventricles is distinct, as is likewise that between the two ventricles. On the right of its base the right auricle forms a well-marked projection, its appendage resting upon the corresponding ventricle; of the left auricle, which is considerably smaller than the right, very little is seen on the anterior aspect of the heart. Connected with the base are the great vessels, which enter and leave the thorax by an opening in its anterior wall. This opening is of an oval shape, its long diameter being vertical and three quarters of an inch in extent, its short diameter transverse, and half an inch in extent. The margin of this fissure is obscured anteriorly by a prolongation of the skin on to the great vessels, and from these on to the external surface of the heart; the cuticle may be traced as far as the base of the viscus, and slightly over the auricles, but beyond this point there is no epithelial covering, *the muscular substance being covered by a structure, shown, on microscopical examination, to be a white fibrous, mixed with yellow elastic, tissue.** The closing up of the thoracic foramen is completed posteriorly by the reflection of the pleura from the great vessels on to the parietes of the thorax."

The heart assumes other anomalous positions, and I last month alluded to a case published by Leimer, in the *Repertorium* for 1852, at page 36. This is a case of cervical ectopia. It occurred in a well-formed and strongly developed calf. The heart was situated on the left side, and nearly in the middle of the neck, and lodged in a hollow excavated in the cervical muscles; *it was covered by a white fibrous membrane.* The heart was perfectly free in this bag; it was of normal size, but somewhat flabby.

* The Italics are my own, as I wish to draw special attention to Alessandrini's reflections, which I have strong grounds to believe correct, notwithstanding what has been said to the contrary. This is a very important fact as connected with other pathological conditions of the heart.

Mr. Sydney Jones, in his remarks on the case of ectopia cordis above spoken of as related in the 'Transactions of the Pathological Society,' says that, "in the cervical ectopia the heart is situated in front of the neck, either immediately above the thorax or in connection with the under part of the head; no authentic case is on record where the heart was situated in the middle region of the neck.

"Vaubonnais relates a case that occurred in a human foetus of eight months, that was born dead; the heart, deprived of pericardium, was suspended from the neck by means of its great vessels, which passed within and without at the lower part of the neck.

"Among the lower animals, a case is mentioned by Walter, in the 'Mus. Anat.' It occurred in a lamb which lived six days after its birth.

"Breschet relates three cases where the heart was situated immediately beneath the head. One is extracted from a 'Mémoire' of Dr. Bonfils; of the other two he was himself the observer. In one of these the apex of the heart was found united to the tongue, between the separated halves of the inferior maxilla. The sternum and the diaphragm were open along the median line, and the greater part of the abdominal viscera had penetrated into the thorax by the opening in the diaphragm, and occupied the space left empty by the displacement of the thoracic organs. The subject was a little girl, probably born prematurely, and who did not appear to have lived. No mention is made of the pericardium."

Mr. Sydney Jones next refers to the external abdominal displacements where the heart forms a hernial protrusion with the abdominal viscera.

"Klein gives an instance (Meckel's 'Deutsches Archiv für die Physiol.') which occurred in a female foetus of eight months (the result of a first pregnancy). It gave very few signs of life, and was only six inches and a half long. The abdominal integuments were absent, and there was a hernial protrusion of the digestive viscera, and, following these, the heart.

"Sandifort (in 'Act. Helvet.') mentions another instance occurring in a premature foetus.

"Béclard and Breschet have related a third case.

"Other cases are described by Prochaska ('Adnotat. Academ.', fasc. iii, Prague, 1734, tab. ii and iii); by Héroid; and by Starke in 'Archiv. für die Geburtsch.' Pinelli, Malacarne, Voigtel, and Heischmann have also published cases referable to this head."

Ectopia cordis may be *internal* as well as external, and the simplest variety of the former is where a displacement of the heart exists without any other deformity.

"Cases have been described by Haller, Sandifort, Morgagni, Otto, Breschet, Möllenbrock, Mohrenheim, Elvert, and others.

"A second variety of internal ectopia is, where an imperfect diaphragm allows the heart to enter the abdominal cavity.

"Deschamps (*Journal Gén. de Médecine*, t. xxvi) mentions the case of a soldier where the heart was formed on the left lumbar region, an opening in the diaphragm allowing the vessels to enter the thorax to be distributed to the lungs.

"In the 'Philosophical Transactions' for the year 1789, Dr. Wilson describes a case that occurred to a child, full-grown at birth, which lived only seven days. The heart was found, after death, in the epigastric region, in relation with the liver."

(*To be continued.*)

Facts and Observations.

EFFECTS OF THE PURGING FLAX (*LINUM CATHARTICUM*) ON HORSES.

A GENTLEMAN writing to us in consultation, and forwarding a specimen of the above plant, informs us that a fine young cart-horse died after eating a quantity of it, the next morning; and a pony belonging to himself in like manner had been poisoned by it, dying five days afterwards. Also, that another horse which had partaken of it, with difficulty recovered from its effects. He found the stomach of his pony highly inflamed; and prior to death taking place, the heart palpitated violently, and purging came on. The herb had been mown with the grass off a cricket-ground, and being allowed to lie and become partially dry, was in a withered state. It was also going to seed. Horses evince almost an avidity for it; but sheep refuse it, its bitterness being offensive to them.

Similar instances to these have been communicated to us; but it is somewhat singular, that botanical works and writers on *Materia Medica* simply describe it as a safe and effective purgative, and many regret its exclusion from the

Pharmacopœia, as an agent of this class. Even the older authors extol it, as Linnæus, Withering, Geiger, and others. It is a small indigenous annual, inhabiting dry pastures, and growing about six or eight inches in height. Its leaves are small and narrow, its stem slender and linear; in July and August it produces white flowers, which are pendulous, and these furnish small globular seed-vessels; it has little or no odour, but an intensely bitter taste, and its active properties reside either in extractive matter, or a resinous principle.

Some of our readers may possibly be acquainted with this plant, and can furnish us with facts respecting its action on our domesticated animals, which will be of value in the absence of any information in the works already referred to.

HORSES' TEETH AND AGE.

MR. C. C. GRICE, M.R.C.V.S., New York, U.S., in an article addressed to the editor of the New York *Spirit of the Times*, says—"In accordance with your request I am induced to write a few lines on this used-up subject, being well aware of the devoted interest you take in everything connected with the advancement of veterinary science. The subject has been thoroughly investigated by many scientific veterinarians in England and elsewhere, and by their researches they have favoured the world with much that is valuable and instructive on the teeth of the horse in reference to its age. Their opinions and experience are entitled to our consideration by extending the bounds of veterinary science.

"It is evident that the teeth, like every other organized substance, from the time of birth to the adult period and old age, undergo change. The process of dentition is a tedious, lengthy, and painful one, subject to much variation. Nature is very capricious; sometimes she is not equal to her wants, and at others is superfluous in her gifts. The incisor teeth appear earlier in some, and wear away faster in animals of the same age, where they are treated every way alike. One may commence teething and complete the process several months earlier than others born at the same date. Their temporary teeth are not always removed by the natural process at the proper time. I have seen the first teeth remaining wedged in with the permanent ones after five years old; and from my own experience I am perfectly satisfied that the age is not correctly shown by the teeth at all times. I have

known the incisor temporary teeth to be removed by breeders and dealers, and the permanent ones, in consequence, would make their appearance three or four months sooner. In the *Veterinarian* of 1845, p. 508, is Goodwin's statement (who was Veterinarian to the Queen) of Running Rein and Bloodstone, 'that they were foaled about the same period, weaned together, taken up together, and every way treated alike, the younger of the two with the older mouth—a positive twelve months' older mouth. Is not this perfectly satisfactory that the test of the horse's age by his teeth is at times fallacious? It certainly goes to prove that it is possible for a colt to exhibit a mouth of twelve months older than he really is.' To test the age by the teeth, the mouth alone should be well studied. The subject has been so ably handled by Mayhew, and other eminent writers, that nothing is left to write about; but I would refer those who wish to be well posted on the subject to provide themselves with Mayhew's works. The different periods of dentition in the horse having been so frequently explained and written about by others, it appears to me to be a work of supererogation to say anything about it here."

CAUSTIC COLLODION.

DR. MACKE, of Sorau, has for some years successfully used a solution of four parts of bichloride of mercury to thirty parts of collodion, as a caustic. Its application is easy, being performed with a camel's hair brush. Its sphere of action may be perfectly determined, and it dries so quickly that it cannot extend to any neighbouring healthy part.

If much inflammation supervene, cold lotions may be resorted to. The eschar is solid, and one or two lines in thickness, according to whether the caustic has been applied once or more frequently. The pain is seldom intense, and soon passes away, and the cicatrix left is but trifling.

SULPHURET OF IRON AN ANTIDOTE TO POISONS.

MIALHE has lately advanced the statement that the HYDRATED SULPHURET OF IRON is an antidote to all metallic poisons, except the cyanide of mercury, as it precipitates arsenious acid, the salts of zinc, tin, lead, bismuth,

antimony, copper, mercury, silver, gold, and platinum, in the state of insoluble sulphuret; while in itself, it has no injurious action. When it is associated with calcined magnesia, it becomes a counter-poison to the acids, and the compounds of cyanogen, and thus it may be accepted as a general antidote to the poisons.

Extracts from British and Foreign Journals.

HEREDITARY INFLUENCE, ANIMAL AND HUMAN.

(Continued from p. 541.)

STILL more striking are the facts of *accidents* becoming hereditary. A superb stallion, son of *Le Glorieux*, who came from the Pompadour stables, became blind from disease; all his children became blind before they were three years old. Burdach cites the case of a woman who nearly died from hemorrhage after bloodletting; her daughter was so sensitive that a violent hemorrhage would follow even a trifling scratch; she, in turn, transmitted this peculiarity to her son. Horses marked during successive generations with red-hot iron in the same place, transmit the visible traces of such marks to their colts. A dog had her hinder parts paralysed for several days by a blow; six of her seven pups were deformed or excessively weak in their hinder parts, and were drowned as useless.* Treviranus† cites Blumenbach's case of a man whose little finger was crushed and twisted, by an accident to his right hand: his sons inherited right hands with the little finger distorted. These cases are the more surprising, because our daily experience also tells us that accidental defects are *not* transmitted; for many years it has been the custom to cut the ears and tails of terriers, and yet terrier pups do not inherit the pointed ears and short tails of their parents; for centuries men have lost arms and legs, without affecting the limbs of our species. Although, therefore, the deformities and defects of the parent may be inherited, in general they are not. For our present argument it is enough that they are so *sometimes*.

Idiosyncrasies assuredly belong to the individual, not to the species; otherwise they would not be idiosyncrasies. Parents with an unconquerable aversion to animal food, have transmitted that aversion; and parents, with the horrible

* 'Girou,' p. 127.

† 'Biologic,' iii, 452.

propensity for human flesh, have transmitted that propensity to children brought up away from them, under all social restraints. Zimmermann cites the case of a whole family upon whom coffee acted like opium, while opium had no sensible effect whatever on them; and Dr. Lucas knows a family upon whom the slightest dose of calomel produces violent nervous tremblings. Every physician knows how both predisposition to and absolute protection against certain specific diseases are transmitted. In many families the teeth and hair fall out before the ordinary time, no matter what hygiène be followed. Sir Henry Holland remarks, "the frequency of blindness as an hereditary affection is well known, whether occurring from cataract or other diseases of the parts concerned in vision. The most remarkable of the many examples known to me, is that of a family where four out of five children otherwise healthy, became totally blind from amaurosis about the age of twelve; the vision having been gradually impaired up to this time. What adds to the singularity of this case is the existence of some family monument long prior in date, where a female ancestor is represented with several children around her, the inscription recording that all the number were blind."* But not only are structural peculiarities transmitted, we see even queer tricks of manner descending to the children. The writer had a puppy, taken from its mother at six weeks old, who although never taught "to beg" (an accomplishment his mother had been taught), spontaneously took to begging for everything he wanted, when about seven or eight months old: he would beg for food, beg to be let out of the room, and one day was found opposite a rabbit-hutch begging for the rabbits. Unless we are to suppose all these cases simple coincidences, we must admit individual heritage; but the doctrine of probabilities will not permit us to suppose them coincident. Let us take the idiosyncrasy of cannibalism, which may be safely said not to appear more than once in ten thousand human beings; if, therefore, we take one in ten thousand as the ratio, the chances against any man manifesting the propensity will be ten thousand to one, but the chances against his son also manifesting it will be—what some more learned calculator must declare.

Not the Species, but the Individual, then, we are forced to admit, presides over heritage; and this will help to explain many puzzling phenomena. Thus M. Danney made experiments during ten years with rabbits, a hundred couples being selected by him with a view to the creation of peculiarities.

* 'Medical Notes and Reflections,' p. 23.

By always choosing the parents "d'après des circonstances individuelles fixes et toujours les mêmes dans certaines lignées," he succeeded in obtaining a number of malformations according to his preconceived plan. And such experiments have been repeated on dogs, pigeons, and poultry with like success. It is on this fact of individual heritage that longevity depends. There is no term of life for the "species," only a term for the individual; a fact which sets all the speculations of Cornaro, Hufeland, and Flourens at nought. There are limits which neither the "species" nor the individual can be said to pass; no man has been known to live two hundred years; but the number of years which each individual will reach, without accident, is a term depending neither on the "species," nor on his own mode of life, but on the organization inherited from his parents. Temperance, sobriety, and chastity, however desirable, both in themselves and in their effects, will not ensure long life; intemperance, hardship, and irregularity will not prevent a man living for a century and a half. The facts are there to prove both propositions. Longevity is an inheritance. Like talent, it may be cultivated; like talent, it may be perverted; but it exists independent of all cultivation, and no cultivation will create it. Some men have a talent for long life.

M. Charles Lejoncourt published, in 1842, his *Galerie des Centenaires*, in which may be read a curious list of examples proving the hereditary nature of longevity. In one page we have a day labourer dying at the age of 108, his father lived to 104, his grandfather to 108, and his daughter then living had reached 80. In another we have a saddler whose grandfather died at 112, his father at 113, and he himself at 115; this man, aged 113, was asked by Louis XIV what he had done to so prolong life; his answer was—"Sire, since I was fifty I have acted upon two principles; I have shut my heart and opened my wine-cellar." M. Lejoncourt also mentions a woman then living aged 150, whose father died at 124, and whose uncle at 113. But the most surprising of the cases cited by Lucas is that of Jean Golembiewski, a Pole, who in 1846 was still living, aged 102, having been eighty years as common soldier, in thirty-five campaigns under Napoleon, and having even survived the terrible Russian campaign, in spite of five wounds, and a soldier's recklessness of life. His father died aged 121, and his grandfather 130. Indeed, the practice of every annuity and insurance office suffices to convince us of ordinary experience having discovered that length of life is somehow dependent on hereditary influence.

Although instincts, in the general acceptance of the term,

may be said to belong to the species and to be transmitted with the specific type, we have abundant evidence of the individual transmission of what are called instinctive peculiarities, or acquired habits. Thus Girou relates the case of a sporting dog, taken young from its mother and father, who was singularly obstinate, and exhibited the greatest terror at every explosion of the gun, which always excites the ardour of the species. On the owner expressing his surprise to the gentleman from whom he received the dog, he was told that nothing was more likely, for the dog's father had the same peculiarity. How the vicious disposition of horses is transmitted all breeders know. Again, we know that the vice of drunkenness is very apt to be inherited; and that the passion for gambling is little less so. "A lady with whom I was very intimate," relates Da Gama Machado, "and who possessed great wealth, passed her nights in gaming; she died young, from pulmonary disease. Her eldest son was equally addicted to play, and he also died of consumption at the same age as his mother. His daughter inherited the same passion and the same disease."* Other and more crapulous vices are inherited, and are exhibited in cases where the early death of the parents, or the removal of the children in infancy, prevents the idea of any imitation or effect of education being the cause. That the "thieving propensity" is transmitted from father to son through generations, all acquainted with police-courts know. Gall† has cited some striking examples; and that murder, like talent, runs in families, is too notorious to need illustrations here. Dogs taught to "point" or "set," transmit the talent. The American dogs inherit the peculiar cunning necessary to hunt the peccari without danger. F. Cuvier has observed that young foxes, in those parts of the country where traps are set, manifest much more prudence than even the old foxes in districts where they are less persecuted. Again, birds born in a country inhabited by man inherit their alarm at his presence; but travellers narrate that the same species encountered on uninhabited islands manifest no alarm, and are knocked down as easily as a gentleman in Fleet Street; they soon, however, learn to dread man, and this dread they transmit. As these last illustrations may be relegated to the vague region of instincts, we will confine ourselves to more individual and accidental characteristics. Thus Girou relates how a man known to him had the habit of sleeping on his back, with his right leg crossed over the left; one of

* 'Théorie des Ressemblances,' p. 154, quoted by Lucas.

† 'Fonctions du Cerveau,' i, p. 207.

his daughters showed the same peculiarity from her birth, and constantly assumed it in her cradle, in spite of her swathings. Venette knew a woman who limped with the right leg; her daughter was born with the defect in her right leg. Ambrose Paré noticed that several children who had a peculiar mode of shaking the head, inherited it from their parents.

The inevitable conclusion from all these facts is, that parents transmit their individual peculiarities of colour, form, longevity, idiosyncrasy, &c., to their offspring, and that they do this *not as reproducing the species*, but as reproducing *their own individual organizations*. But now comes the difficult part of our inquiry:—Which is the predominating influence, that of the male or that of the female? If both parents join to form the child, does one parent give one group of organs, and another parent another group; or do both give all?

“Half is his, and half is thine: it will be worthy of the two!”

sings the poet; and the physiologist asks,—*Which* half?

Speaking of mules, Vicq-d'Azyr says, with proper caution, that “it seems as if the exterior and the extremities were modified by the father, and that the viscera emanate from the mother.” The reserve with which the great anatomist expresses himself has not been imitated by his successors; indeed, men are generally averse to uncertainties — they like a decisive opinion, a distinct formula. Hence we have the very popular formula adopted by Mr. Orton in his “Lectures,”—“That the male gives the external configuration, or, in other words, the locomotive organs; while the female gives the internal, or in other words, the vital organs;” which is generally stated with more scientific precision thus—“the male gives the animal system, the female the organic or vegetative.” Very great and authoritative names may be cited in support of this view; and as all such formulas are the expressions of numerous facts, we must expect to find their advocates powerful in facts to support them. If there are facts which are equally explicit and diametrically opposed to those used as evidence for the theory, it is clear that the theory expresses only part of the truth. Let us see how the case stands.

Linnaeus says that the *internal* plant (*i. e.*, the organs of fructification) in all hybrids is like the female; the *external* (organs of vegetation), on the contrary, resembles the male. This is, however, diametrically opposed by De Candolle, who announces it as a general law that the organs of vegetation are given by the female, those of fructification by

the male.* When two doctors of such importance differ on a point like this, we may suspect that both are right and both are wrong; and here our suspicion is supported by the mass of facts adduced in the experiments of M. Sagaret,† which refute the hypothesis of Linnæus and the hypothesis of De Candolle. What we have just indicated with regard to plants, has been the course pursued with regard to animals: one class of observations has seemed to prove that the father bestows the “animal system;” another class of observations has seemed to prove that the mother bestows it; and a third class has proved both theories inadequate. Quite recently General Daumas published the result of his long experience with Arab horses,‡ arguing that according to the testimony of the Arabs, the stallion was the most valuable for purposes of breeding. Upon this, the *Inspecteur des Haras*, who had traversed Asia for the express purpose of collecting evidence on the subject, published his diametrically opposite conclusion, declaring that it was the mare whose influence preponderated in the foal. General Daumas replied, and cited a letter addressed to him by Abd-el-Kader, who may certainly be said to understand Arab horses better than Europeans. The letter is worth reading for its own sake; we can, however, only quote its testimony on the particular point now under discussion. “The experience of centuries has established,” he says, “that the essential parts of the organization, such as the bones, the tendons, the nerves, and the veins, are always derived from the stallion. The mare may give the colour and some resemblance to her structure, but the principal qualities are due to the stallion.” This is very weighty testimony, on which we will only for the present remark, that it merely asserts the *preponderance* of the male influence as respects the locomotive system; it does not assert that absolute independence of any female influence, maintained in the formula of Prevost and Daumas, Lallemand and others, which we are now combatting. Abd-el-Kader’s statement is tantamount to that made by Mr. Orton,—

“I do not mean it to be inferred that either parent gives either set of organs uninfluenced by the other parent; but merely that the leading characteristics and qualities of both sets of qualities are due to the male on the one side, and to the female on the other, the opposite parent modifying them only.”

* ‘Physiologie Végétale’, p. 716.

† ‘Pomologie Physiologique,’ p. 555, sq.

‡ ‘Les Chevaux de Sahara;’ see also an article in the ‘*Révue des Deux Mondes*,’ May, 1855, on *Le Cheval de Guerre*.

This is a much more acceptable theory than the other, but it is only an approximation to the truth. Mr. Orton's first illustration is the hybrid of the horse and ass.

"It is known that the produce of the male ass and the mare is a mule; but I do not think it is equally well-known that the produce of the stallion and the female ass is what has been denominated a hinny—yet such is the case. . . . The mule, the produce of the ass and mare, is essentially a modified ass—the ears are those of an ass somewhat shortened—the mane is that of an ass—the tail is that of an ass—the skin and colour are those of an ass somewhat modified—the legs are slender, the hoofs high, narrow, and contracted, like those of an ass. The body and barrel are round and full, in which it differs from the ass and resembles the mare."

This description is accurate, but—we put it interrogatively—is it *always* the description of a mule, and *never* that also of a hinny? This latter, the produce of the stallion and the female ass, "is essentially a modified horse—the ears like those of a horse somewhat lengthened—the mane flowing—the tail bushy like that of a horse—the skin is fine like that of a horse—the legs are stronger, and the hoofs broad and expanded like those of a horse. The body and barrel are flat and narrow, in which it differs from the horse, and resembles its mother the ass." From these facts, Mr. Orton deduces the conclusion, that the offspring of a cross is not simply a mixture of the two parents, nor is it an animal that has accidentally a similitude to one or other of its parents, inasmuch as we can produce at will either the hinny or the mule. The reader will presently see why such a conclusion cannot be accepted; and we may at once anticipate what will hereafter be more fully explained, by saying that the differences Mr. Orton signalises are easily interpreted by another theory. In point of fact, both mule and hinny are modified asses: in each the structure and disposition of the ass predominates; and it does so in virtue of that greater "potency of race" which belongs to the ass—a potency which is less effective on the hinny, because the superior vigour of the stallion modifies it, according to ascertained laws.

"I would call your consideration," Mr. Orton continues, "to a very curious circumstance pertaining to the voice of the mule and the hinny; to which my attention was called by Mr. Lort. The mule *brays*, the hinny *neighs*. The why and wherefore of this is a perfect mystery, until we come to apply the knowledge afforded us by the law I have given. The male gives the locomotive organs, and the muscles are amongst these; the muscles are the organs which modulate the voice of the animal; the mule has the muscular structure of its sire the ass, and brays; the hinny has the muscular structure of its sire the horse, and neighs."

This seems decisive, until we extend our observations, and

then we find the law altogether at fault. Thus the produce of a bull and a mare neither *lowed* nor *neighed*, but uttered a shrill cry somewhat like that of the goat. The produce of a dog and a she-wolf sometimes bark and sometimes howl, according to Buffon; and the produce of a bitch-fox and a dog, according to Burdach, barked like a dog, though somewhat hoarsely, and howled like a wolf when it was hurt. A similar remark has been made by all who have attended to cross-breeding in birds; the hybrid of the goldfinch and the canary has the song of the goldfinch mingled with occasional notes of the canary, which seem perpetually about to gain the predominance. Finally, we know how, in the human family, a magnificent voice is inherited from a mother as often as from a father.—*Westminster Review*.

(*To be continued.*)

EXTRACTS FROM THE REPORT ON THE ADULTERATION OF FOOD AND DRUGS.

THE following is the final report of the Select Committee of the House of Commons appointed to inquire into the adulteration of food, drinks, and drugs:

“Your committee have inquired into the subject referred to them, and in the course of their investigation have examined a great number of witnesses, comprising men of high scientific attainments, as well as those whose practical knowledge as dealers seemed to point them out as persons likely to give useful information.”

(The witnesses examined are here enumerated.)

“Though the witnesses differed both as to the extent to which adulteration is carried on, and as to its nature and effects, your committee cannot avoid the conclusion that adulteration widely prevails, though under circumstances of very various character. As regards foreign products, some arrive in this country in an adulterated condition, while others are adulterated by the English dealer. Other commodities, again, the produce of this country, are shown to be in an adulterated state when passing into the hands of the dealers, while others undergo adulteration by the dealers themselves.

“Not only is the public health thus exposed to danger, and pecuniary fraud committed on the whole community; but the public morality is tainted, and the high commercial character of this country seriously lowered, both at home

and in the eyes of foreign countries. Though, happily, very many refuse, under every temptation, to falsify the quality of their wares, there are, unfortunately, large numbers who, though reluctantly practising deception, yield to the pernicious contagion of example, or to the hard pressure of competition forced upon them by their less scrupulous neighbours."

(Here follows a list of the principal articles adulterated, as already given.)

"The adulteration of drugs is extensively practised; and when it is borne in mind that the correctness of a medical prescription rests on an assumed standard of strength and purity in the drugs or compounds employed, and how frequently life itself depends upon the efficacy of the medicines prescribed, it is difficult to exaggerate the evils arising from this prevalent fraud.

"These adulterations may be classified under three heads,—those of which the object is to lower the price of the article adulterated, by the admixture of substances of a cheaper kind; those which are intended to improve the appearance of the adulterated article, and thus in many cases to deceive the public as to its quality; and those which are practised for the purpose of simulating some property injured or destroyed in the process of adulteration.

"Adulterations in each of these classes are of two kinds,—those in which are employed substances of an innocuous character; and those in which the mixtures are more or less injurious to health, either directly by the noxious properties of the ingredients, or indirectly by lowering the nutritive qualities of the article adulterated.

"In dealing with these various adulterations, it is necessary to distinguish between the pecuniary fraud practised on the public, and the injury to public health. If, as regards the adulteration of articles with substances of a cheaper and innocuous character, the public derive the full benefit of this cheapness in a lower price, it would be difficult, if not unwise, for the Legislature to interfere, unless it could do so by requiring that every such article be sold as a mixture, as distinguished from the article in its pure state. This the law already requires as to the article of coffee, and also as to the article of bread, which, unless made of wheat-flour alone, must be distinctly marked with the letter 'M.' But, whenever an article is so adulterated as to involve pecuniary fraud or injury to health, it appears to your committee to be the duty of the Legislature to provide some efficient remedy.

"It has been objected that the best course would be to leave the buyer to take care of himself. But there are many

adulterations which it is impossible for the buyer to detect. Already the law takes note of frauds in weights and measures, of injuries likely to result to the public health from the sale of unwholesome animal food, and, indeed, of many adulterations, though in most cases only with a view to fiscal considerations, and not to those of a moral or sanitary character.

“It is said, too, that there are many frauds which legislation cannot reach or punish. But, on the other hand, it would be difficult to tell the numberless frauds which legislation may prevent.

“The great difficulty of legislating on this subject lies in putting an end to the liberty of fraud without affecting the freedom of commerce.

“With a view to form an opinion as to the best remedy for this growing evil, your committee have obtained evidence as to the law on adulterations in other countries, and especially in France, Belgium, Germany, and the United States. In this object your committee have been materially assisted by returns procured through the kindness of Lord Clarendon from some of our Ministers at foreign Courts.

“As to the present state of the law in this country, your committee received much valuable information from Mr. S. R. Goodman, the legal adviser to the justices of the city of London.

“The following is a brief statement of the laws of different countries on the subject of adulterations:”

The laws enacted in other countries are here detailed. After which the committee proceed to say, that, in framing a measure applicable to adulterations generally—

“It is impossible to frame any enactment on this subject which shall rely on strict definitions. The object of the law is to strike at fraud, and wherever a fraudulent intention can be proved, there to inflict a penalty. What constitutes fraud must be left to the interpretation of the administrators of the law. Thus, mixtures of an innocuous character, made known by the seller, or used for the preservation of the article, cannot be forbidden without danger to the needful freedom of commerce, and ought not to be interpreted as coming within the provisions of a penal law. Nor should those provisions apply wherever the seller can afford satisfactory proof that he has himself been deceived, and was not conscious of the adulteration practised; unless he have evinced a culpable ignorance of the trade which he professes to follow.

“Subject to these qualifications, the law should be clear

and positive in forbidding adulteration, and in punishing those who practise it.

“Hitherto the progress of legislation has not kept pace with the ingenuity of fraud, which has not scrupled to avail itself of every improvement in chemistry or the arts which could subserve its purpose.

“Although, however, the means of adulteration have greatly increased, so also, fortunately, have the facilities for detection, especially by the improved use of the microscope, which has been employed by Dr. Hassall and others with signal success.

“At first, no doubt, some difficulty would be experienced in finding persons qualified to conduct the required chemical and microscopical examinations; but the want will soon give rise to the needful supply. This want has been already felt by the Board of Inland Revenue, which has been compelled, for the purposes of the analysis requisite in cases of adulterated articles of Excise, to educate persons for this special duty. In addition to about 4000 officers, scattered over the country, whose experience enables them to detect many adulterations, and to discover cases of strong suspicion, the Board employs about 60 to 70 analytical chymists, whose numbers are recruited by students, educated for this purpose at University College, to the number of fourteen in every year. Mr. Phillips, the chief officer of the chemical department of the Board of Inland Revenue, states that the practice is for the officers, if they suspect a trader of adulterations, or on information given to them, to go and procure samples. Many are competent to examine samples on the spot. If they have any doubt on their own judgment, they send them to the laboratory to be further examined. And he adds, as showing the result of the system adopted by the Board, that adulteration has been totally stopped in some articles, and much diminished in others, from the very fact that traders know they are liable to inspection by the Excise officers.

“It has been suggested that the prevention of adulterations in food might be accomplished by an extension of the system of the Board of Inland Revenue; but your committee are of opinion that no machinery for this purpose will work satisfactorily unless the agent employed derive their authority from corporate or other local governing bodies.

“It will be desirable, therefore, to empower municipal or other local or district authorities to appoint an officer, or officers, who, on complaint made, or in cases of reasonable suspicion, shall procure portions of any article supposed to

be adulterated, with a view to their examination or analysis by some duly qualified person appointed for that purpose. On the report of such persons, if it confirm the suspicion of adulteration, a summons shall be issued and the case be investigated before the justices, who shall have power to inflict summary punishment, by fine or imprisonment, in every case where pecuniary fraud or danger to health shall have been proved. The justices should also be empowered to publish the names of offenders. The advantages of publicity have been urged by many witnesses, and especially by Dr. Hassall and Mr. Wakley, who attribute a recent great diminution in the amount of adulteration to the publication of names and other particulars in the reports of the '*Lancet* Commission.' It is essential that a right of appeal should lie to the Court of Quarter Sessions.

"With reference to drugs, your committee are of opinion that no inspection at the outports would guarantee to the consumer the purity of commodities passing through the hands of intermediate parties; and the exclusion of impure drugs would operate injuriously, by interfering with the supply obtained by scientific processes, calculated to extract valuable matter, even from products seemingly almost worthless.

"It has been suggested that chymists and druggists should be allowed to exercise their calling only under licence. At present, to use the words of one of the witnesses, Mr. Jacob Bell, 'a man may be a shoemaker to-day, and a chymist and dispenser of drugs to-morrow, though he cannot assume the name of "pharmaceutical chymist."' [Would there were a corresponding advantage possessed by the members of our profession—that none but those who had graduated as M.R.C.V.S. should be allowed to assume the name of Veterinary Surgeon.] "The question of licences, however, may perhaps be properly deferred till it be seen how far the efforts of the Pharmaceutical Society and a more general system of inspection may prove successful. The existing powers of inspection in England are confined to the College of Physicians and the Apothecaries' Company. The powers of the latter are very limited, extending only to apothecaries' shops, and in no way to those of chymists and druggists. The College of Physicians has authority to inspect both one and the other; but this authority is confined to the limits of the City of London, where inspection takes place three times a year. The inspection, however, seems to be too cursory to be of any great utility.

"It has been shown that much good has arisen from the

establishment of the Pharmaceutical Society, the members of which, being specially educated in the knowledge of drugs, are better able than heretofore to make proper selections and to detect adulterations. Several witnesses, too, have borne testimony to the great advantage which would ensue if Poor Law guardians and managers of hospitals and other similar institutions would, instead of accepting, as they too often do, the lowest tender for drugs, and, indeed, for articles of food also, cause them to be properly inspected, and, if needful, analysed, before admitting them into use.

"Though not coming strictly within the scope of the inquiry intrusted to them, your committee cannot forbear calling attention to the evidence concerning patent medicines, the sale of poisons, and the state of the pharmacopœias of the three kingdoms.

"With regard to patent medicines, there can be no doubt that the public health is endangered by the use of several of these compounds; and your committee are of opinion that the stamp duty, by giving them a seeming Government sanction, has an injurious influence in encouraging their sale and consumption, and should be abandoned, whenever this can be done with a due regard to the wants of the public revenue.

"The unrestricted sale of poisons is a matter of pressing importance, and deserves the early attention of the Legislature. At the present moment, the most violent poisons may be universally sold, without any restriction except such as is afforded by the sense of moral responsibility on the part of the dealer. It is needless to point out the serious consequences which frequently ensue from this unrestrained freedom. To take a familiar instance—it is stated in evidence that the essential oil of bitter almonds, and what is called 'almond flavour,' of various strengths, and containing highly dangerous elements, are openly and commonly sold for culinary purposes, and, in the hands of servants wholly ignorant of their properties, used in quantities often dangerous, and sometimes fatal. It is well worthy of consideration whether the sale of poisons should not be forbidden, unless under the authority of a medical prescription, or under such conditions, as to witnesses and formal entries of the names and addresses of purchasers, as may secure the needful amount of caution.

"The evil arising from the existence of three distinct, and, in some important instances, widely differing pharmacopœias for the three kingdoms, is one too evident to need enforcement. The result is, that many of the prescriptions of one

country are not only inefficacious, but often absolutely dangerous, if made up in either of the others. One of the witnesses states that an Edinburgh prescription, containing a solution of morphia, made up in London, would involve the patient's taking twice the quantity intended. On the other hand, a patient taking prussic acid under an Edinburgh prescription, made up in London, would be taking only half the quantity intended, the Edinburgh prussic acid being twice the strength of the prussic acid of the London pharmacopœia. This is an evil which can be remedied only by the combined efforts of the medical authorities of England, Ireland, and Scotland, to whom the subject should, without delay, be referred."

ON THE MANUFACTURE OF IRON AND STEEL WITHOUT FUEL.

By Mr. W. BESSEMER.

(Proceedings of the British Association.)

MR. BESSEMER asserted that crude iron contains about 10 per cent. of carbon; that carbon cannot exist at white heat in the presence of oxygen, without uniting therewith and producing combustion, that such combustion would proceed with a rapidity dependent on the amount of surface of carbon exposed; lastly, that the temperature which the metal would acquire would be also dependent on the rapidity with which the oxygen and carbon were made to combine, and consequently that it was only necessary to bring the oxygen and carbon together in such a manner that a vast surface should be exposed to their mutual action in order to produce a temperature hitherto unattainable in our largest furnaces. With a view of testing practically this theory, he had constructed a cylindrical vessel of three feet in height, somewhat like an ordinary cupola furnace, the interior of which was lined with fire-bricks; and at about two inches from the bottom of it inserted five tuyere pipes, the nozzles of which were framed of well-burnt fire-clay, the orifice of each tuyere pipe being about three-eighths of an inch in diameter. These were so put into the brick lining (from the outer side) as to admit of their removal and renewal in a few minutes when they were worn out. At one side of the vessel, about half way up from the bottom, there was a hole made

for running in the crude metal, and on the opposite side there was a tap-hole stopped with loam, by means of which the iron was run out at the end of the process. The vessel should be placed so near to the discharge-hole of the blast furnace as to allow the iron to flow along a gutter into it. A small blast cylinder would be required, capable of compressing air to about 8 lb. or 10 lb. to the square inch. A communication having been made between it and the tuyeres before named, the converting vessel would be in a condition to commence work. It would, however, on the occasion of its being first used after re-lining with fire-bricks, be necessary to make a fire in the interior with a few baskets of coke, so as to dry the brickwork and heat up the vessel for the first operation, after which the fire would have to be all carefully raked out at the tapping-hole, which would again be made good with loam. The vessel would then be in readiness to commence work, and might be so continued without any use of fuel, until the brick lining in the course of time became worn away and a new lining was required. The tuyeres are situated nearly close to the bottom of the vessel; the fluid metal will therefore rise some eighteen inches or two feet above them. It is necessary, in order to prevent the metal from entering the tuyere-holes, to turn on the blast before allowing the fluid crude iron to run into the vessel from the blast furnace. This having been done, and the fluid iron run in, a rapid boiling up of the metal will be heard going on within the vessel, the metal being tossed violently about, and dashed from side to side, shaking the vessel by the force with which it moves from the throat of the converting vessel. Flame will then immediately issue, accompanied by a few bright sparks. This state of things will continue for about fifteen or twenty minutes, during which time the oxygen in the atmospheric air combines with the carbon contained in the iron, producing carbonic acid gas, and at the same time evolving a powerful heat. Now, as this heat is generated in the interior of, and is diffused in innumerable fiery bubbles through, the whole fluid mass, the metal absorbs the greater part of it, and its temperature becomes immensely increased: and by the expiration of the fifteen or twenty minutes before named, that part of the carbon which appears mechanically mixed and diffused through the crude iron has been entirely consumed. The temperature, however, is so high that the chemically-combined carbon now begins to separate from the metal, as is at once indicated by an immense increase in the volume of flame rushing out of the throat of the vessel. The metal in the vessel now rises several inches above its natural

level, and a light frothy slag makes its appearance, and is thrown out in large foam-like masses. This violent eruption of cinder generally lasts five or six minutes, when all further appearance of it ceases—a steady and powerful flame replacing the shower of sparks and cinder which always accompanies the boil. The rapid union of carbon and oxygen which thus takes place adds still further to the temperature of the metal, while the diminished quantity of carbon present allows a part of the oxygen to combine with the iron, which undergoes combustion, and is converted into an oxide. At the excessive temperature that the metal has now acquired, the oxide, as soon as formed, undergoes fusion, and forms a powerful solvent of those earthy bases that are associated with the iron. The violent ebullition which is going on mixes most intimately with scorixæ and metal, every part of which is thus brought into contact with the fluid, which will thus wash and cleanse the metal most thoroughly from the silica and other earthy bases which are combined with the crude iron, while the sulphur and other volatile matters which cling so tenaciously to iron at ordinary temperatures are drawn off, the sulphur combining with the oxygen, and forming sulphurous acid gas. The loss in weight of crude iron during its conversion into an ingot of malleable iron, was found, on a mean of four experiments, to be $12\frac{1}{2}$ per cent., to which will have to be added the loss of metal in the finishing rolls. This will make the entire loss probably not less than 18 per cent., instead of about 28 per cent., which is the loss on the present system. A large portion of this metal is, however, recoverable, by treating with carbonaceous gases the rich oxides thrown out of the furnace during the boil. These slags are found to contain innumerable small grains of metallic iron, which are mechanically held in suspension in the slags, and may be easily recovered, by opening the tap-hole of the converting vessel, and allowing the fluid malleable iron to flow into the iron ingot moulds placed there to receive it. The masses of iron thus formed will be perfectly free from any admixture of cinder, oxide, or other extraneous matters, and will be far more pure, and in a sounder state of manufacture than a pile formed of ordinary puddle bars. And thus it will be seen, that by a single process, requiring no manipulation or particular skill, and with only one workman, from three to five tons of crude iron passes into the condition of several piles of malleable iron in from thirty to thirty-five minutes, with the expenditure of about one third part the blast now used in a fiery furnace with an equal charge of iron, and with the consumption of no other fuel than is contained in the crude iron.

To persons conversant with the manufacture of iron (says Mr. Bessemer), it will be at once apparent that the ingots of malleable metal which I have described will have no hard or steely parts, such as are found in puddled iron, requiring a great amount of rolling to blend them with the general mass; nor will such ingots require an excess of rolling to expel cinder from the interior of the mass, since none can exist in the ingot, which is pure and perfectly homogeneous throughout, and hence requires only as much rolling as is necessary for the development of fibre; it therefore follows that, instead of forming a merchant bar or rail by the union of a number of separate pieces welded together, it will be far more simple and less expensive to make several bars or rails from a single ingot. Doubtless this would have been done long ago, had not the whole process been limited by the size of the ball which the puddler could make. I wish to call the attention of the meeting to some of the peculiarities which distinguish cast steel from all other forms of iron—namely, the perfect homogeneous character of the metal, the entire absence of sand-cracks or flaws, and its greater cohesive force and elasticity, as compared with the blister steel from which it is made—qualities which it derives solely from its fusion and formation into ingots, all of which properties malleable iron acquires, in a like manner, by its fusion and formation into ingots in the new process; nor must it be forgotten that no amount of rolling will give to blister steel (although formed of rolled bars) the same homogeneous character that cast steel acquires by a mere extension of the ingot to some ten or twelve times its original length. One of the most important facts connected with the new system of manufacturing malleable iron is, that all the iron so produced will be of that quality known as charcoal iron; not that any charcoal is used in its manufacture, but because the whole of the processes following the smelting of it are conducted entirely without contact with, or the use of any mineral fuel; the iron resulting therefrom will in consequence be perfectly free from those injurious properties which that description of fuel never fails to impart to iron that is brought under its influence. At the same time this system of manufacturing malleable irons offers extraordinary facility for making large shafts, cranks, and other heavy masses. It will be obvious that any weight of metal that can be founded in ordinary cast iron by the means at present at our disposal, may also be founded in molten malleable iron, to be wrought into the forms and shapes required, provided that we increase the size and power of our machinery to the extent necessary to deal with such large

masses of metal. A few minutes' reflection will show the great anomaly presented by the scale on which the consecutive processes of iron making are at present carried on. The little furnaces originally used for smelting ore have been from time to time increased in size, until they have assumed colossal proportions, and are made to operate on two or three hundred tons of materials at a time, giving out ten tons of fluid metal at a single run. The manufacturer has thus gone on increasing the size of his smelting furnaces, and adapting to their use the blast apparatus of the requisite proportions, and has by this means lessened the cost of production in every way. His large furnaces require a great deal less labour to produce a given weight of iron than would have been required to produce it with a dozen furnaces; and in like manner he diminishes his cost of fuel blast and repairs, while he ensures a uniformity in the result that never could have been arrived at by the use of a multiplicity of small furnaces. While the manufacturer has shown himself fully alive to these advantages, he has still been under the necessity of leaving the succeeding operations to be carried out on a scale wholly at variance with the principles he has found so advantageous in the smelting department. It is true that hitherto no better method was known than the puddling process, in which from 400 lb. to 500 lb. weight of iron is all that can be operated upon at a time; and even this small quantity is divided into homœopathic doses of some 70 lb. or 80 lb., each of which is moulded and fashioned by human labour, and carefully watched and tended in the furnace, and removed therefrom one at a time, to be carefully manipulated and squeezed into form. When we consider the vast extent of the manufacture, and the gigantic scale on which the early stages of the process is conducted, it is astonishing that no effort should have been made to raise the after-processes somewhat nearer to a level commensurate with the preceding ones, and thus rescue the trade from the trammels which have so long surrounded it. Before concluding these remarks, I beg to call your attention to an important fact connected with the new process, which affords peculiar facilities for the manufacture of cast steel. At that stage of the process immediately following the boil, the whole of the crude iron has passed into the condition of cast steel of ordinary quality. By the continuation of the process, the steel so produced gradually loses its small remaining portion of carbon, and passes successively from hard to soft steel, and from soft steel to steely iron, and eventually to very soft iron; hence, at a certain period of the process, any quality of metal may be obtained. There is one

in particular, which, by way of distinction, I call semi-steel, being in hardness about midway between ordinary cast steel and soft malleable iron. This metal possesses the advantage of much greater tensile strength than soft iron. It is also more elastic, and does not readily take a permanent set, while it is much harder and is not worn or indented so easily as soft iron. At the same time it is not so brittle or hard to work as ordinary cast steel. These qualities render it eminently well adapted to purposes where lightness and strength are specially required, or where there is much wear, as in the case of railway cars, which, from their softness of texture, soon become destroyed. The cost of semi-steel will be a fraction less than iron, because the loss of metal that takes place by oxidation in the converting vessel is about two and a-half per cent. less than it is with iron; but as it is a little more difficult to roll, its cost per ton may be fairly considered to be the same as iron. But as its tensile strength is some thirty or forty per cent. greater than bar iron, it follows that for most purposes a much less weight of metal may be used; so that, taken in that way, the semi-steel will form a much cheaper metal than any that we are at present acquainted with. The facts which I have brought before the meeting are not mere laboratory experiments, but the result of working on a scale nearly twice as great as is pursued in our largest ironworks—the experimental apparatus doing 7 cwt. in thirty minutes, while the ordinary puddling furnace makes only $4\frac{1}{2}$ cwt. in two hours, which is made into six separate balls, while the ingots or blooms are smooth, even prisms, ten inches square by thirty inches in length, weighing about equal to ten ordinary puddle balls.—*The Athenæum*.

EXTRACTS FROM A LECTURE ON STRYCHNIA.

By STEVENSON MACADAM, Ph.D., F.R.S.E.

The lecturer having given the botanical history of the *Koochla* tree, which grows abundantly in the southern districts of India, on the Malabar and Coromandel coasts, and furnishes the poison-nut, or seed, whence strychnia is obtained, with the manner of abstracting this alkaloid, proceeds to observe that the tests for it are many, and some of them quite characteristic, as seen by the following table :

THE STRYCHNINE TESTS.

- A. *Potass*, a white precipitate, insoluble in excess.
- B. *Bicarbonate of Soda* (in acid solution), no precipitate.

- C. *Sulphocyanide of Potassium*, a white precipitate.
- D. *Perchloride of Mercury*, a white precipitate.
- E. *Perchloride of Gold*, a lemon yellow precipitate.
- F. *Chlorine Water*, a white precipitate, which dissolves in ammonia to colourless liquid.
- G. *Nitric Acid* (cold), colourless solution; (heat), yellow solution.
- H. *Sulphuric Acid* (with trace of *Nitric Acid*) and *Binoxide of Lead*, a violet, changing to a red colour.
- I. *Sulphuric Acid* and *Binoxide of Manganese*, a violet, changing to a red colour.
- J. *Sulphuric Acid* and *Bichromate of Potash*, a violet, changing to a red colour.

The tests A to G cannot be applied excepting where the quantity of strychnine at the command of the operator is considerable, so that in dilute solutions they fail to act. The remaining tests, H to J, are, however, much more delicate, and will indicate a most minute amount of strychnine. So far as my experience goes, I prefer the sulphuric acid and bichromate of potash test, as it is much more certain in its action, and is more delicate than any or all of the other tests. The colour indications are best seen in a pure solution of strychnine; the presence of organic matter impedes the action of the test, and alcohol, acetic acid, and other bodies, entirely destroy the characteristic colour. In order to steer clear of these sources of error, Dr. Letheby has lately suggested that the substance to be tested should be treated with sulphuric acid, and placed on a piece of platinum foil connected with the positive pole of a galvanic battery, and thereafter, on touching the liquid with the negative pole of the battery, which terminates in a platinum wire, the characteristic violet tint is at once produced. In this way $\frac{1}{100000}$ th of strychnine in pure water has been detected. I have repeatedly tried this process, and can bear witness to the accuracy of the test; but in practice I have found the sulphuric acid and bichromate of potash to be a more delicate test, though it is much more difficult to manage. Lately a good deal has been said in disparagement of the colour tests for strychnine, and considerable doubt has been thrown upon the trustworthiness of colour tests in general. Precipitate tests are certainly more satisfactory than colour tests, because they signify the presence of a larger amount of the particular substance under examination; but, in general, colour tests are far more delicate in their action than precipitate tests. A very good example of this occurs in testing for iodides. When these are abundant, precipitate tests with soluble salts of lead and mercury may be readily obtained; but by dilution a point is at last reached when lead or mercury solutions cease to be precipitated by the liquid containing the iodide. At this point the starch test, which, in a very dilute solution of an iodide is essentially a colour test, comes into play, and long after the precipitate tests fail to indicate an iodide, the colour test shows unmistakable evidence of its presence. The same remark applies to testing for solutions of persalts of iron, and copper, by means of ferrocyanide of potassium. In strong solutions a blue precipitate is indicative of iron, and a ruddy-brown precipitate speaks of copper; but when dilute solutions are examined, blue and ruddy-brown colorizations are alone obtained. Colour tests, therefore, are the most delicate of all tests; they indicate the presence of a body when precipitate tests cannot do so; and for my own part, I see no reason why I should distrust my sense of colour whilst manipulating in my laboratory, and confide in it at other times.

I have now to refer to the action of strychnine on animals, with special reference to its subsequent detection in the animal system. At the begin-

ning of June, through the kindness of the Messrs. Hislop, of Prestonpans, a two-year old horse was placed at my disposal. The animal was in good condition, and, saving that he was broken-winded, was in every other respect perfectly sound. The strychnine was at first administered in small doses at a time, the object being not to kill the animal till there was the likelihood of some of the poison being absorbed into the system,

The following table gives the doses of strychnine given to, and the symptoms exhibited by—

THE HORSE.

	0 minute.	3 grs. of strychnine in meal and water.
	25 minutes.	3 grs. " "
	45 "	6 grs. " in ball, made up of barley meal.
1 hour		First tremor observed. Twitchings of the facial muscles.
1 "	2 "	Tremors.
1 "	20 "	6 grs. of strychnia in ball, made up of grease and meal. Twitchings and tremors.
1 "	45 "	6 grs. of strychnine in mash, made up of bran, oats, and beans, bruised and mixed.
1 "	50 "	12 grs. of strychnine in mash.
2 hours.		Quick and alternate motion of the limbs—convulsive cries—tetanus set in—horse fell on its side.
2 "	1 minute.	Death.

The sudden death of the horse after the tetanic symptoms began to manifest themselves, may be attributed to its old complaint, broken-windedness. The physiological effects of strychnine were therefore not well seen in this instance, but the case was interesting otherwise, as will presently appear.

On the evening of the same day I brought to town the stomach and its contents; the bladder and its contents; one-half of the spleen, liver, lungs, heart, and kidneys; with a large quantity of blood and muscle. The remainder of the horse was buried where it could be readily exhumed.

In examining animal matter for strychnine I have found the following process eminently serviceable, and I confidently commend it to the notice of analysts, as a method which can be depended upon. The animal matter when solid is chopped into minute fragments, and treated with a dilute solution of oxalic acid. After standing for twenty-four hours, during which time the mass is repeatedly agitated, the whole is filtered through muslin. The contents of the filter are well washed with water, and the washings added to the filtrate. The liquid so obtained is heated to ebullition, when albuminous matters separate, and whilst warm is filtered through paper. Animal charcoal is added to the filtrate, and after repeated agitation during twenty-four hours, the supernatant liquid is decanted off, and the charcoal received on a paper filter, where it is well washed with cold water. The charcoal, now retaining the strychnine, is allowed to dry spontaneously, thereafter placed in a flask, drenched with alcohol, and the whole kept for two hours at a temperature barely short of ebullition. The alcoholic extract is separated by filtration from the charcoal, and is evaporated down to dryness in a porcelain vessel, at a water-bath heat. The residue so obtained will generally be found in a fit condition to be at once tested for strychnine; but should such not be the case, a few drops of oxalic acid solution are again added, and the process repeated from the action of charcoal down-

wards. Proceeding in this manner, with several parts of the horse, I found distinct evidence of the presence of strychnine in (1) the contents of the stomach, (2) the muscle, (3) the blood, and (4) the urine. The latter had been collected in the bladder under very favorable circumstances, as the horse passed its urine immediately prior to the administration of the strychnine doses, so that the contents of the bladder experimented on by me, had all been secreted during the period the animal was under treatment by strychnine. Whilst successful in tracing the presence of strychnine in the contents of the stomach, the muscle, the blood, and the urine of the horse, I have to record its non-detection in the liver, spleen, lungs, kidneys, and heart. Its apparent absence in these organs may be attributed to the process which was followed in manipulating with them. Instead of employing oxalic acid in the first step of the process, I substituted in its place dilute hydrochloric acid. This may appear a very slight alteration in the method pursued, but nevertheless, I believe it to be sufficient to account for the non-appearance of the strychnine. Indeed, experiments made on portions of the contents of the stomach, muscle, and blood, demonstrated, that whilst these, when treated with oxalic acid, yielded decided indications of strychnine, yet other portions to which hydrochloric acid had been added, only gave the faintest signs of its presence. That strychnine was diffused through the portions of liver, spleen, lungs, kidneys, and heart experimented upon appears certain, as four weeks afterwards, by following the oxalic acid process, I detected its presence in those parts which had been buried. Hydrochloric acid is, therefore, unserviceable in testing for strychnine in the animal system. Tartaric acid gives results equally successful with those yielded by oxalic acid, whilst acetic acid has always appeared to me troublesome on the application of the colour test. In after experiments on strychnine poisoning, the oxalic acid process was rigidly adhered to.

(*To be continued.*)

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HON.

Thirtieth Annual Report of the Royal Society for the Prevention of Cruelty to Animals.

BEFORE us is lying the above Report, from which we gather that the progress of the Society is in accordance with the wishes of its patrons and supporters. And who is there possessing a spark of humanity within him that does not wish continued success to it? To the members of our profession it surely needs not to appeal, since we hope there is not one amongst us who would not heartily second its intentions and

aid its efforts; should there be, we bid him hide his head and blush to own himself a man. How often have we almost wished that the *lex talionis* could be applied to the vile miscreant who unnecessarily tortures a poor brute struggling to do his duty, ill-fed and nearly worn out by age, as too frequently is the case. It is true that the business of large towns necessitates a call on the labour of animals, at times amounting to pressure on the physical powers, yet more would be obtained from them by kindness than unkindness. It was well remarked by the mover of the adoption of the Report, Sir J. Buller East, Bart., M.P., that "there is no foundation whatever for the charge that kindness to animals betokens any unmanliness of character; on the contrary, it is the very essence of manliness, it being our bounden duty at all times to protect the weak against the strong."

It is gratifying to know that the agents of this institution, being now numerous, are ever on the alert, and that too when the cowardly offender perhaps little thinks he is observed by them; further, that punishment follows detection almost to a certainty, and the result of this is, that the commission of acts of cruelty are less frequently than heretofore allowed to pass unnoticed. Still, from time to time instances do occur; and were the Society to slacken in its duties, again the like harrowing scenes would be enacted that were once witnessed, and which escaped, if they did not defy, the strong arm of the law. With such a staff of officers as it now possesses, there can be, however, no fear entertained of this again taking place.

Strongly have we denounced vivisection, and the performance of cruel and uncalled for experiments on the lower animals, to settle some disputed physiological question, and not unfrequently to build up some fancied theory of the operator, which after years have proved to be false; and it is exceedingly gratifying to us to read the following remarks by Professor Spooner, when seconding the reception of the Report:

"I have, during the greater part of my life, been intimately associated with the habits of the lower animals, and for many years past it has been

my professional province to exert my utmost endeavours to alleviate their sufferings; I cannot, therefore, but have long since felt, and most deeply felt, the advantages accruing to society from the efforts of this very laudable institution. (Cheers.) I assure you that the cruelty to which I have been a witness, inflicted upon animals under the specious plea of the furtherance of scientific pursuits has, on many occasions, caused me much pain, for I may be permitted to say, in this assembly, that there is no occasion to inflict the severe suffering to which animals are frequently subjected, with a view of determining physiological and pathological results. (Loud cheers.) The same experiments which, from time to time, have been performed, have not unfrequently been followed by very different phenomena, and, under these circumstances they have tended rather to confuse, in my opinion, than to substantiate and advance medical science. A practical experience in these matters, extending over more than a quarter of a century, has led me to the conclusion that the varied symptoms and results of disease itself afford to the physiologist sufficient opportunity to contemplate and determine with reference to physiological facts. (Hear.) I am of opinion that no valid plea can be advanced for the performance of vivisections, nothing can warrant men in inflicting such acts of cruelty on the lower animals. It is perfectly true that many of them are given to us by an all-wise providence for our nourishment and support, and, in a measure, to contribute to our luxuries; but it is not true that we have any right, in the exercise of our authority over them, to inflict upon them any unnecessary pain, or protracted suffering. We should at all times reflect that, although not endowed with the power of reason and of speech, they are, nevertheless, possessed of a nervous system equally susceptible to pain with that which belongs to ourselves. (Cheers.) That this Society has been attended with very great advantages there cannot be a doubt, but I am of opinion that there is yet work for us to do, if we all of us exert our individual and collective efforts in carrying out its objects. Not one of us can walk in the streets of London and see the poor animals that are daily used in our public vehicles without being impressed with the fact that much cruelty, in spite of our efforts to repress it, is still inflicted upon them. Unfortunately, hitherto, the advantages of this institution have, I believe, only extended to those cases where wounds have been seen to have been inflicted upon the surface of the body of the animal, and thereby excited the attention of the casual observer; but there are many instances where the animal may be known to suffer, and yet it may not give any such external evidence of its disease; and in my estimation it falls within the scope of this Society to extend its protective influence to those cases. (Cheers.)

Again, we wish the Society all prosperity.

We have just been informed that the directors have recently elected, as their Veterinary Surgeon, Mr. Gabriel, M.R.C.V.S., and Secretary to the Royal College of Veterinary Surgeons. All this is an omen for good, and augurs well for the conduction of the Society.

THE VETERINARIAN, OCTOBER 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

“WHAT NOT TO DO, AND WHAT TO DO.”

It was well observed by Mr. Hawthorn, in a communication inserted in a previous number of this Journal, that “a good doctor exhibits his skill as much in knowing what *not* to do as in knowing what to do.” Little doubt have we that many a patient has *succumbed* to the doctor’s skill, or the want of it, rather than to the disease. But “dead men,” and dead horses, too, “tell no tales.”

It is this ability to determine what is to be done, and when, which distinguishes the man who is conversant with principles from the mere pretender or empiric; and at once draws the broad line of demarcation between him whose practice is based on science and him whose treatment of disease consists in the employment of a code of musty recipes, including the use of agents the *modus operandi* of not one of which, perhaps, he is acquainted with; since it has never been his to inquire into the reason of things, the whys and the wherefores, but he has always been contented to do as others have done before him. Such men never do, and never can, contribute to the advancement of science; for should they by chance develop a principle they are altogether unconscious of it, and, being thus ignorant, they let it slip. With them practice is a mere routine or custom; a course to be over and over again followed, whatever may be the circumstances that may arise, or however these may call for the exercise of thought and of judgment.

Nor would we exhaust our censure on these persons alone, such being, perhaps, scarcely worth the noticing; but we fear that not a little of this system has found its way where it ought not to have done; and many from whom we have a right

to expect other and better things, since they are not unacquainted with principles, fall into a similar mode of practice. It is true, when an emergency occurs, they can, and do avoid the consequences that would result from pursuing one accustomed course; but where we especially think evil arises, is in the inculcation of the same general system to those whom they are the instructors of.

“Example always goes before precept;” and we would that preceptors on whom this responsibility rests should show how valuable a knowledge of principles to direct always is. That the educated veterinary surgeon can no more do without them than the mariner can traverse the ocean without chart or compass; an acquaintance with them being the means by which both are alike enabled to avoid the rocks and the quicksands that otherwise would cause them to become a wreck; their reputation and that with which they have been intrusted being then, and perhaps for ever, lost.

We have been led to make these remarks from observing how sadly deficient we find an application of principles to obtain amongst us, and how much we wish it were otherwise.

We plume ourselves on being a scientific body, and we believe that we do possess some little ground for the proud distinction. We are certainly not what the older farrier was, and we have discarded, for aye and for ever, many of his absurdities; yet does there remain much for us to do. Let us then be continuous in well-doing.

We have before said we are no destructives, nor have we any desire to undo what has been so earnestly begun; but we are solicitous that what is done for the future shall be better done. An old writer has quaintly said, “If a one-sided tendency becomes too strongly prominent, it is my (I know not whether I ought to say) manner or *unmanner*—from a natural fear lest the ship capsize, to go over to the other side with as much force as is possible with my small weight.” Now some such duty as this is felt by us to be ours, although it may be but little that we can hope to accomplish. We have to be, in a sense, on the watch, lest the ship strike on a rock, or become grounded on some sand-bank. We are

embarked in her, and were there no other feeling, there is at least that of self-interest to actuate us. But we trust we have something higher and nobler than this—a philanthropic spirit—which animates us and urges us onwards.

LIFE ASSURANCE.

We return to this subject, and extract from a popular journal of high repute the following appropriate observations:

“The man of twenty-five years of age, young, strong, full of hope, and health, and vigour, thinks, perhaps, that he need not concern himself about life-assurance at present, as he has a long lease of life before him. Let us see if this is a sound view which he takes of his own position. According to the now well-known laws of the value of life at different ages, he may expect to live about thirty-seven years. Now, how many chances are there against his continuing regularly to set aside the annual sum he designs as a provision for his family, in the event of his decease, when he is not impelled by the fear of loss in failing in his engagement with another party, by the formality of the contract between them, by the periodical demand of the company? If he hoards his savings, they will amount to little compared with what an insurance-company would give, and are liable to be continually encroached upon for trifling objects. His grand aim is to improve these savings as much as he can, with perfect security. Is he likely to be able to invest them from time to time so readily, or so securely, as a company which receives them from him in small annual—or even quarterly—payments, and, without trouble to him, invests them safely and profitably? And what bright prospect, what fair chance of health, long life, or good-fortune, can be set against the moral certainty he acquires that those for whom he is anxious to provide are assured beyond all accidents or risks of the

sum he is desirous to secure for them, even should he die the next day after having paid only the first annual premium? How many chances are there against his attaining the expectation due to his age? Of every hundred persons of the same age, ten will be cut off in ten years. What assurance has he that he will not be one of the ten? In the next ten years, eleven more will have gone to their graves; and at the end of the thirty-seven years, of the hundred who, thirty-seven years previously, were living men of twenty-five, only fifty-six—little more than half—will remain. Who, then, that would not leave any one for whom he has a regard in difficulties were he cut off, will be so rash as to delay insuring because he has a chance of a long life? But this is not all. If he delays, he may be attacked by disease. He will, most likely, have about nine weeks' sickness between twenty-five and thirty-five, the effects of which on his constitution may raise considerably the premium for insuring his life. Between thirty-five and forty-five, he is liable to about twelve weeks' illness; fifteen, between forty-five and fifty-five. Lastly, should he have the singular good fortune to have all these chances turning in his favour—to attain a long life—to acquire independence—to have preserved good health, so that delay would not have increased his premium, he cannot be so selfish as to complain, when he receives a return but little short of what he has advanced (with its compound interest)—to grudge that little difference which has gone to alleviate the sufferings of others who have been less fortunate, while he has so large a proportion of his payments returned to him, and has enjoyed so long the security he sought for his family, or his old age.”—*Reid on Life Assurance*.

[Our readers must not be displeased if from time to time we direct their attention to this important subject. We believe that the public mind is not yet alive to its own interest in reference to it, and requires to be educated to see its full value. We are contented to be charged with mercenary motives, but believe we are actuated by higher principles,

since it is constantly occurring that members of our profession die leaving no means whatever of support to their surviving families, nor is there any society immediately in connection with our profession, to supply that which is in every sense so desirable. Only very lately an instance has occurred in which the father dying while young the widow is left without anything to bring up her young family. This might have been secured by timely insuring his life, which would have called for only a small annual outlay.]

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, JULY 23, 1856.

PRESENT:—The President; Messrs. Burley, Cherry, Constant, Dickens, Field, Jones, Langworthy, Legrew, McKenna, Robinson, Shorten, Turner, Wilkinson, Withers, Prof. Simonds, and the Secretary.

W. STOCKLEY, Esq., the President, in the Chair.

The minutes of the previous meeting were read and confirmed.

Letters were read from Mr. Jex, regretting his unavoidable absence; from the Vice-Presidents, returning thanks for their election; and from Mr. Solly, resigning his seat at the Board of Examiners.

On the motion of *Mr. Field* seconded by *Mr. Wilkinson*, the resignation of Mr. Solly was accepted.

On the motion of *Mr. Wilkinson*, seconded by *Mr. Burley*, Mr. Gabriel was re-elected as registrar for the ensuing year.

Mr. Gabriel moved, and *Mr. Dickens* seconded the re-election of the Finance Committee, Messrs. Braby, Ernes, Simonds, Wilkinson, and Jex.

Mr. McKenna proposed, and *Mr. Robinson* seconded, the re-election of the House Committee, Messrs. Field, Spooner, Morton, and Ernes.

Mr. Gabriel proposed, and *Mr. Robinson* seconded, the re-election of the Registration Committee, Messrs. Simonds, Morton, and Wilkinson.

Mr. Legrew proposed, and *Mr. Shorten* seconded, the re-election of the General Purposes Committee, Messrs. Spooner, Robinson, Silvester, Ernes, Jones, and Field.

The motions were unanimously agreed to.

In the absence of the Treasurer, the consideration of the balance sheet, on the motion of *Mr. Cherry*, seconded by *Mr. Field*, stood over to the next meeting.

The Registrar reported one death—that of Mr. F. D. Elkes—and twenty-four admissions; twenty from the London, and four from the Edinburgh school.

In reference to the allowance to the Secretary, *Mr. Cherry* moved the amount be £70 per annum, which he believed to be in accordance with the original intentions of the Council.

Mr. McKenna moved, as an amendment, that considering the prosperous state of the College, and the very efficient services of the Secretary, his salary be £80 in place of £70.

Mr. Field seconded the amendment, which was carried by a majority of 9 against 3.

A communication was then laid before the Board from Professor Spooner, referring to a previous letter from the Governors of the Royal Veterinary College, respecting the proposed reduction of examination fees, and requesting an early answer from the Council.

After a discussion as to the former proceedings of Council in reference to this subject, it was suggested that the question be considered at the next meeting; but ultimately—

The following resolution, proposed by *Mr. Gabriel*, and seconded by *Mr. McKenna*, was unanimously adopted:

“That the Secretary be requested to acknowledge the receipt of Professor Spooner’s letter, referring to a previous letter from Mr. Newdegate, and to inform him that a deputation will wait on the Governors of the Royal Veterinary College at their meeting of the 26th.”

Mr. Langworthy, Mr. Field, Mr. Robinson, the President, and Secretary, were named as the deputation.

It was also resolved that the President should call a meeting as soon after the communication with the governors as possible, and that the Secretary should write to Professor Spooner to know whether a deputation could be received on the day mentioned.

Cheques were ordered for the current expenses of the quarter, and for the petty cash account.

CHARLES DICKENS,
JOHN JONES,
E. N. GABRIEL.

SPECIAL MEETING OF THE COUNCIL, AUG. 20, 1856.

PRESENT:—The President; Messrs. Cherry, Constant, Dickens, Ernes, Jones, Silvester, Turner, Wilkinson, Professor Spooner, and the Secretary.

W. STOCKLEY, Esq., the President, in the Chair.

The *Secretary* said, it would be remembered that at the last meeting, a deputation was appointed to wait on the Governors of the Royal Veterinary College on the 26th of July, in reference to the proposed reduction of the examination fee. The day of meeting of the governors was altered to the 25th, and the deputation waited upon them on that day; but, as a quorum of governors could not be formed, no official communication took place. In the course of conversation, the governors presentsaid they thought the examination fee should be reduced, as the Council was collecting considerable funds, which, as had been intimated to them, would probably be applied to the foundation of a rival school; and, moreover, the pupils of the Scotch school were satisfied with the cheap certificate of Professor Dick. The deputation replied, that after fourteen years the funds of the College only amounted to between £200 and £300; that there was not the slightest intention to establish a rival school; and that every year several of the pupils of the Scotch school were at the expense and labour of obtaining the diploma of the College, after having received Professor Dick's certificate. Mr. Newdegate expressed a hope that, should the question be again raised, and the funds of the College would admit of it, it would be entertained by the Council.

The *President* confirmed the accuracy of the Secretary's statement.

Mr. Cherry thought the governors must have been misinformed, as the question of a rival school had never, so far as he was aware, been entertained by the Council. As no formal proceedings had taken place, no steps could be taken at that meeting.

Mr. Turner and *Mr. Wilkinson* expressed a desire that, if possible, the subject should be at once discussed, and not be indefinitely postponed.

Professor Spooner said, that the governors had not been misinformed (he himself having been their informant), and that the Secretary's statement was founded in a misconception of what the governors wished to convey.

The *President* said the subject could not be discussed afresh

(the Council having previously resolved to take no steps in the matter), unless at a special meeting, of which notice must be given.

After some conversation it was resolved, on the motion of *Mr. Wilkinson*, seconded by *Mr. Dickens*, "that the committee appointed by the Council be requested to wait upon the governors at their next meeting, on the 14th of October, and that they make their report at the next quarterly meeting of the Council."

Messrs. Dickens, Jones, and the Secretary, were named as the committee of supervision of this and the preceding meeting; and the proceedings then terminated.

CHARLES DICKENS,
JOHN JONES,
E. N. GABRIEL.

Veterinary Jurisprudence.

NISI PRIUS COURT.

Before Lord Chief Justice CAMPBELL.

Goy v. NORFOLK.—An action for the price of a horse sold with a warranty was brought at the Lincoln Assizes on Tuesday. The plaintiff, Mr. Goy, is a horse-dealer at Wragby; and the defendant, Mr. Norfolk, a farmer in the same neighbourhood. The sale of the horse took place on the 28th of September. It was a big chesnut horse, which plaintiff had bought six days before at Howden fair, on which occasion he rode and jumped him, and found him, as he stated, quite sound, free from cough, and in good general condition. He paid 32*l.* 10*s.* for him, and on the 28th resold him to the defendant for 48*l.*—a warranty being given on both occasions. When the defendant bought he also rode the horse, and expressed himself, as the plaintiff said, quite satisfied with him. He said that he did not like so big a horse, as they were liable to go roarers; but after the trial he liked him better "by all the money." The horse was sent home to the defendant the next day; and, according to the plaintiff's evidence, the defendant about a fortnight afterwards told him that he was quite pleased with the horse, that he was very fresh, and that he was a capital jumper; but two or three weeks later, when the plaintiff spoke to him about

settling for the price, he replied that the horse was dead. Still, he did not dispute his liability to pay, but promised to settle in a week or so; and the plaintiff said that it was a bad job, and he was willing to give up all profit upon the transaction. Subsequently a post-mortem examination of the horse took place, the defendant then informed the plaintiff that his veterinary surgeons were of opinion that the horse must have had disease both of the heart and lungs before the day of the sale to him; and that the plaintiff, therefore, must look to the man of whom he bought it, and not to the defendant. No opportunity, however, had been afforded to the plaintiff of attending the post-mortem examination. The history of the horse was traced from the time of his birth. The breeder, who had kept him for three years, described him as having always been healthy and lively; and those who had possession of him down to the sale to the plaintiff, at Howden Fair, concurred in that description. As he was brought from Howden to Wragby, one of the witnesses stated that, as he got to the top of a hill, he once made a sort of cough or grunt; but, with that exception, he exhibited no symptoms of illness; and, according to plaintiff's evidence, when defendant bought him he was in the same condition. Defendant, on the other hand, stated that at the time he seemed dull and ill, and coughed several times, though he jumped and galloped pretty well. The horse blundered in his walk, and he only bought him in consequence of the assurance of plaintiff that a dose of physic would bring him right. During the time he was in defendant's possession, the defendant's witnesses stated that the horse continued to be dull, and to cough occasionally, and that he continued to get worse and worse until the 25th of October, when he died; a veterinary surgeon having been called in on the 23d. He had been once taken out for walking exercise on the 13th of November; but he had no violent exercise during the whole time of his being in the defendant's possession. After the death of the horse, two veterinary surgeons examined him.

Mr. Clarke, veterinary surgeon, of West Ashby, said that when he first saw the horse, on October 22d, it was in a very depressed state, with an intermitting pulse, a symptom of heart disease. While taking the pulse he noticed a remarkable regurgitation of the blood in the jugular vein, another symptom of heart disease. He bled the horse, taking five quarts of blood, and gave him some purgative and sedative medicine. On the following day the symptoms were nearly the same. On the 24th, he could hardly feel the horse's pulse. Made a post-mortem examination after the horse's

death. The lungs were softer than natural ; the heart was very much enlarged ; in fact it was, he believed, the largest heart he had ever seen. The outer wall of the heart was very thick. The right auricle and right ventricle were both dilated. The disease must have existed some time, not less than six months at any rate. The change in the condition of the walls of the heart was effected very slowly ; the lungs were susceptible of a more speedy alteration. He considered the enlarged state of the heart to be the cause of death. Looking at the state of the lungs he should expect that the horse would cough when alive, and that he would be very dull.

Cross-examined.—Had been in practice eight years, but only passed the Veterinary Surgeon's College last May. Considered bleeding a proper mode of treatment for disease of the heart. The pulse of the diseased horse was 74 ; the ordinary pulse of a horse was 36. A pulse of 74 might indicate inflammation.

Re-examined.—The extremities were of a natural heat, which showed the absence of inflammation.

Thomas Fletcher, veterinary surgeon, said that on November 9th, the plaintiff brought him the heart and lungs of a horse. Witness examined them. The lungs were very soft, and not in a natural state, but he could not say positively whether that had not been the effect of their being buried. The heart was very large indeed—the result of disease. Believed the disease to have been of long standing ; from four to six months at least must have elapsed, he should say, since its commencement. The substance of the right auricle was very hard ; the right ventricle was very much dilated, and the wall was nearly twice its natural thickness and soft. These were all slow processes ; the thickening of the wall would take two months at least. The pericardium was very thick, and blood-vessels had been formed over it—another result of disease. The immediate cause of death was, in his opinion, disease of the heart. No treatment could have saved the life of a horse in such a state. He believed that bleeding and purging were not inappropriate treatment in a case of disease of the heart.

Cross-examined.—The disease was certainly of long standing. Witness was not of very long standing himself ; he passed the College last May. There was sufficient evidence in the lungs of the existence of disease. Among the symptoms of disease of the heart were a general dulness and fever pervading the system and affecting the appetite. Exercise, galloping and jumping, would increase the depression of the spirits. In a case of disease of the lungs there would be generally a running from the nose, and coughing.

Mr. Serjeant Hayes, with the permission of the Court, then called—

Charles Spooner, Principal Professor at the Royal Veterinary College, who said : I have heard the description given of the symptoms of this horse's disease. All the observations made with reference to the state of the lungs lead me to suppose that the disease was of recent occurrence, and that it might have been produced as a consequence of inflammation within two or three days prior to the death of the animal. Keeping horses inactive always predisposes them to inflammatory affections. The symptoms described by *Mr. Clarke* indicated the existence of acute inflammatory disease in the lungs and heart. The hearts of horses vary very much, and I have often known inexperienced persons to take large hearts for diseased hearts. The description given by *Mr. Clarke* and *Mr. Fletcher* of the state of the heart was unquestionably evidence of chronic disease in that organ. Presuming the description to be correct, the disease must have existed some months ; but I say that the symptoms during the life of the horse, if it had been suffering from heart disease, would have been so marked that they could not possibly have escaped observation. The horse would have been totally incapable of physical exertion, such as it is described to have gone through—and would have given unmistakeable evidence of his case. The disease, under any circumstances, must have been the result of acute inflammatory affection at some period in the life of the horse. Death, when it is the result of disease of the heart, is generally very sudden ; but I don't believe that the cause of death in this case was disease of the heart.

Lord Campbell, in summing up, told the jury that the defence in this case cast no imputation whatever on the plaintiff, who had, at any rate, sold the horse under the impression that it was sound. If, however, it were diseased at the time, the plaintiff, having warranted it, could not recover. It was for the jury, therefore, to consider from the evidence whether the horse died from a complaint which existed at the time of its sale.

The Jury, after some deliberation, returned a verdict for the *Plaintiff*.

MISCELLANEA.

HORSEFLESH FOR FOOD.

M. Isidore Geoffrey St. Hilaire has just delivered two new lectures, at the Museum d'Histoire Naturelle, Jardin des Plantes, Paris, on his favorite theme of introducing horseflesh as an article of food. He, as on previous occasions, cited Liebig to prove that the food of man must contain a certain portion of azoted substances, and he showed that horseflesh is rich in azote. He also stated that M. Chevreul, the eminent chemist, has proved that horseflesh contains more creatine than oxflesh. He argued that as the horse lives on herbs, there is nothing in his flesh which can render it unwholesome or repugnant. After saying that Hippocrates was favorable to the use of horseflesh, he quoted from Baron Larrey's Memoirs to show that in the siege of Alexandria that eminent surgeon caused horseflesh to be given to the soldiers, and even to the sick, and that they derived great benefit from it. He stated that in 1811 the Conseil de Salubrité of the capital strongly recommended the use of horseflesh for food. And he reminded his hearers that it is now and always has been the principal article of food of the peoples of Asiatic Tartary, and is used in Siberia, in Persia, and even in China. He also reminded them that horseflesh was generally used in Europe until Christianity was established, and that even now in Copenhagen, in the principal towns of Germany, and in Belgium, it is publicly sold. He added that, in 1854, the flesh of 1180 horses was eaten at Vienna, and that at present not fewer than 10,000 of the population of that city use horseflesh. He concluded by stating that the importance of adopting horseflesh for food may be judged of from the fact that out of 3,000,000 horses in France, 267,000 are killed annually (without counting those that die of maladies), and that each horse produces about 224 kilogrammes of flesh. The kilogramme is equal to 2.22 lbs.

LARDED FILLET OF QLD HORSE,

AN interlude, consisting of an excellent fricandeau à chiorée, and a delicate fowl with white sauce, enabled the experimenters to await patiently the roast joint of horse; the fillet of the animal, which had been slightly marine and richly larded. An explosion of satisfaction! Nothing can be finer, more delicate or tender. Fillet of roe-deer—of whose

aroma it reminds you—is not superior. A member of the jury begs to carry home a slice. Many repeat the experiment. Gourmands are not aware of the excellence of this joint—I recommend it to their attention. It is perfect in every respect. Ye little susceptibilities of my stomach, how very ridiculous you were! Unanimously and enthusiastically, the jury proclaimed that the fillet of the old horse ought to take rank with the most recherché and luxurious meats. M. H. Bouley was conquered and converted, and boldly avowed the fact. August truth compels me to state that some excellent roast partridges, which followed the horse, were not absolutely disdained by the jury, any more than the delicate entremets that succeeded them, or than the insinuating temptations and fruits of the dessert; which proves evidently that horseflesh does not stick by the way during its passage through the intricate and narrow defiles of the digestive channel—and that is an element of some importance in the question. For my part, remembering a true and clever aphorism uttered by a man who is well informed in the hygiène of the stomach—our fellow-labourer, M. Véron—I waited four-and-twenty hours before writing these lines, in order to be able to declare that I am inditing without the slightest digestive remorse.—*Dickens's 'Household Words.'*

ADVANTAGE OF RAILWAYS.

“As exemplifying the saving of waste, in the transportation of fat stock to the London market, by the introduction of railways, Mr. Hudson (of Castleacre, Norfolk) mentioned to us a fact which may be interesting. Formerly, when several days were occupied in driving to London, a sheep was found on the average to have lost 7 lbs. weight, and 3 lbs. inside fat, and a bullock 28 lbs. These weights are ascertained by a series of trials, average animals being killed and weighed on the farm, and compared with the weights of similar animals when slaughtered in London. This difference of weight was waste, entirely lost to everybody. On the quantity of stock annually sent out by Mr. Hudson, this loss was equivalent in value to upwards of £600 a year; nearly the whole amount of which now finds its way to the market, as the stock are put into the trucks in the morning and reach London in the afternoon, without fatigue. When it is considered over how great a quantity of stock throughout the country a similar saving has been effected, there can be no doubt that the increased weight so saved has had a perceptible influence in increasing the general supply of the market.”—*Caird's English Agriculture.*

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THE INTRODUCTORY ADDRESS,

DELIVERED BY

PROFESSOR SIMONDS,

AT THE ROYAL VETERINARY COLLEGE.

SESSION 1856-57.

GENTLEMEN,—By our presence here to-day we are forcibly reminded that another cycle of time has been completed—another year has passed, which will ever be memorable as giving to the world the blessings of peace, and the opening up of new hopes and prospects to the arts and sciences, and ours among the number. With the outbreak of the war, urgent demands were made on the patriotism of the nation, and fresh claims upon the services of our profession. Right nobly were these responded to; and the number of veterinary surgeons who hastened forward to the post of duty and of danger was found to be fully ample to supply all the pressing wants of both the cavalry and the artillery. For me to recount the noble deeds done by them on the battle-field, or their devotedness to the practice of their profession, evinced under the most trying circumstances, would be to select one or two individuals for commendation at the expense of others equally brave and equally zealous in the discharge of their onerous duties. Suffice to say that, as a body, they not only merited but received the approbation of their commanding officers, as likewise of the Veterinary Surgeon-General and the Senior Veterinary Surgeon to the artillery, with whom their appointments chiefly rested. On this pressing necessity the science of veterinary medicine stood out in bold relief, and all were alike ready to bear testimony to its value. We have here a proof that the more extended its operations become,

the more its value will be appreciated, clearly showing that in itself veterinary science contains all the elements of success as well as usefulness. I cannot resist in this place recalling to your memories the observations of His Royal Highness the General Commanding-in-Chief, on the occasion of his honouring us by his presence at the annual dinner of the profession: "I assure you," said His Royal Highness, "that I know the value of the profession with which most of you are connected. As regards the army it is of the greatest possible service. In my position in the army I have had the advantage of becoming acquainted with many members of your profession, and I am glad to see several old friends of mine here to-day. I entertain for them the highest opinion, and duly appreciate the importance of their services. I have seen them perform those services with the greatest possible credit to themselves in times of peace; lately I have witnessed their performance of them with cheerfulness and zeal, and under great difficulties, in time of war. I therefore feel deeply interested in your profession, and I trust that the college in honour of whose president we have met this evening may continue to prosper and to extend its usefulness from year to year." Here, gentlemen, is enough, nay more than enough, to rouse you to action, and to call forth your daily exertions while in the pursuit of knowledge within this institution. It is during your pupilage that the foundation for success must be laid: therefore, if time be misspent, if idleness take the place of industry, or self-sufficiency of a desire to profit by the instruction which is afforded you, you will be like him 'who buildeth his house upon the sand.'

I have already spoken of the claims which were put upon our profession by the war; and I allude to the subject again for the purpose of observing that had that unhappy state of things continued, it is more than probable that some modification of the curriculum of your studies, especially in that which relates to pathology, would have been made. But are these claims now the less? No, rather, as we have said, they are increased; and, ere long, additions to your education will be made in order that these may be satisfied. In the mean time let us give heed to the things which are, and endeavour to turn them to a profitable account.

So well acquainted are most of you with the course of the instruction which is carried out in this institution, that it is almost a work of supererogation to allude to it; but I must follow former precedents and time-honoured customs, and say that your studies embrace the anatomy, physiology, and pathology of domesticated animals in general, with che-

mistry as applied to veterinary medicine and materia medica; the principles and practice of surgery and veterinary jurisprudence; while the art of shoeing will also receive some share of your attention. As to the means which are at your command to acquire a knowledge of these several sections of your profession—First, stands attendance on the lectures which will be delivered in this theatre by the several professors. Here you must not only be regular and punctual, but careful to observe order and decorum, or you cannot hope to profit by this method of instruction. There is perhaps no plan of imparting information which is more pleasing and attractive than *viva voce* discourses; but at the same time there is also none which is more evanescent, and therefore, unless each hearer determines to make the matter his own, and to follow step by step as the lecturer leads on, he will depart little benefited, or not at all, by what he has heard. Nor must this suffice for a right understanding of the subject, for as the lecturer at most can be but your pioneer, so after he has placed the landmarks, you must fill up the interspaces by study and research.

The second means I name is hospital practice. You must be equally strict in your attendance to this as to the lectures, for it is in the yard and stables of the institution where you will see daily brought into operation those principles which have been inculcated in the lecture-room. Disease and death are the lot of all. Man and animals are alike under the curse. But still it is our privilege to be permitted to alleviate suffering, and to be instrumental in removing disease. Here then is the origin of pathology, a knowledge of which is the great end and object of all your studies. It is also in your daily rounds of the infirmary that you will become practically acquainted with the examination of horses for soundness upon purchase. There are few things of more importance than this. Upon the correctness of your judgment more will often depend than you at the time can contemplate. Disputes may arise, litigation follow, and you be called upon to vindicate your opinion in a court of justice, where perchance you may find yourself opposed by one better versed in the nature of disease, and thus, by the evidence he gives, you may have to bear the stigma of disgrace as well as defeat; or, on the other hand, by your knowledge of the subject you may successfully oppose conflicting evidence, and win for yourself an honorable and lasting reputation.

Thirdly, may be placed dissections. These have for their object a practical acquaintance with the several component parts of the animal body; the relation which they bear to

each other, and the harmony which exists in the whole. No written descriptions, however graphic, nor demonstrations, nor pictorial illustrations, notwithstanding their value as aids, can supply this knowledge. A practical anatomist possesses an immense advantage; he will never be at a loss on emergencies, and will be enabled to maintain a calm and collected mind during the most critical operations.

Besides these three, you have another auxiliary of considerable importance, namely, the meetings of the Veterinary Medical Association; in connection with which is also the free use of the library. It is not easy to over-estimate the value of the association, being built as it is on the foundation of mutual instruction. Here the opinions of your teachers can be freely canvassed; here, too, the statements of authors can be fairly judged, and the observations of your fellow-pupils impartially criticised. One thing alone is required to secure all its advantages, and that is free and open discussion carried on with due consideration to the feelings of others. It argues well for the future success of the association that last year a greater number of new members were enrolled than had been the case for several years before, and that more essays of a superior order were read at its weekly meetings. This fact is shown by the circumstance that the Council have selected an increased proportion of the essays as being worthy of the special certificate of thanks of the association, the possession of which entitles their respective authors to rank as honorary fellows.

And now, having glanced at the opportunities which are placed at your disposal in the acquirement of knowledge, I must enter a little more into particulars, and analyse, as it were, the several elements which combine to form the art of veterinary surgery. First, the subjects of the lectures. These, as you may expect, are multifarious; and consequently some of them will receive more elucidation than others, your teachers exercising in this respect their judgment and experience. We may name in the first place anatomy. "The science of organization, which has for its object the examination of the organs or instruments of life." Anatomy is usually divided into human and comparative; the former limiting its investigations to the structure of the human body alone, while the latter extends its ramifications of inquiry to all the other creatures of the animal kingdom. In one sense, then, veterinary surgeons are comparative anatomists, but it is theirs also to confine their researches to certain animals; these being such as fall more immediately under the subjugating power of man for the supply of his more pressing wants.

We are accustomed, and there are many advantages arising from it, to place the organization of the horse as the standard of comparison for the rest of the domesticated animals; and to speak of a bone, for instance, as having certain parts added to it, or wanting others, or being modified in its general outline, in each particular animal as compared with the same bone of the horse. The mind thus educated, not only quickly takes cognizance of these differences, but retains them more lastingly than it otherwise would do. It is much to be regretted that in this country there is no work which especially treats of the anatomy of domesticated animals, although England can boast of as great and erudite comparative anatomists as any country in the world. Many of them are, however, for the reason we have named, and also from the circumstance that their investigations are confined to the lower forms of animal life, but very imperfectly acquainted with the details of the organization of domesticated animals. In this institution your teachers endeavour to supply this want as best they can. Whether it is the duty of any one of them to fill up this hiatus, is a question difficult to solve when viewed in its *practical* bearing. Such labours, and they would extend over several years, must be requited with something beyond mere honour, at least pecuniary loss must be provided against; and until some of the obstacles which now stand in the way of this being done are removed, we fear that the day is far distant when such a work will be the property of the veterinary profession.

Besides the primary division of anatomy into *human* and *comparative*, each section is subdivided into *descriptive*, which treats of the form, shape, &c., of the different organs, and the relation they bear to each other; and *general* anatomy, which recognises the structure and physical nature of the tissues composing the organs. These divisions have special reference to an animal body when in health; but as, by disease, changes are wrought both in the form, composition, and physical condition of the organs, so we have to do with abnormal or morbid anatomy, called also pathological anatomy. From what has been observed, it is evident that no advance can be made in the latter until the former is thoroughly understood, for we must necessarily fail to recognise a change in a part, if we are unacquainted with its normal condition. A knowledge of anatomy then lies at the basis of all advancement in the healing art, and it is this knowledge which marks the difference between the man of science and the charlatan. One is master of numberless details relating to his profession, which the other is entirely

ignorant of. One is guided by precise and fixed laws, while the proceedings of the other are as erratic as a wandering star. Closely allied to anatomy is the external conformation of animals as indicative or otherwise of their capabilities to undergo exertion, withstand the ordinary causes of disease, or quickly accumulate flesh and fat from relatively a small quantity of food.

The anatomist knows full well that external conformation is but the index of internal development; that a capacious chest, for example, must contain large lungs and heart. Very much of the contour of animals, and consequently very much of their health and utility, has been for wise purposes placed within the sphere of man's power to operate upon. Hence has arisen the science and the practice of breeding for the improvement of form, an investigation of the principles of which is to be regarded as a collateral branch of our art. Englishmen have gained for themselves a proud position and a lasting reputation for their indomitable perseverance in the cultivation of this science. Our country has thus become the world's emporium, and British animals find their way to every corner of the globe, supplanting not only the aboriginal, but all the cultivated breeds. The prices obtained sound to uninitiated ears more like fiction than fact, and that even for animals intended to be used for stock purposes among ourselves at home. Time would not suffice, nor is this occasion suited, for a discussion of the law of reproduction in all its varied phases, enough to say that it essentially "consists of the transmission of physical and mental qualities from parents to their offspring." Many extern circumstances tend to modify this law, and some of these appear at times to be so conflicting in their operation, that men of equal eminence in the art of breeding attach to them the very opposite effects. Notwithstanding our advances then, there is still much left for future research, in further elucidation of this subject.

I pass on to speak of another element of veterinary medicine, namely, Physiology, "the science which treats of the properties of organic bodies, of the phenomena they present, and of the laws which govern their actions." As we may anticipate, there is much room for speculation here, and although the functions of some parts are placed beyond dispute, those of others admit of different explanations, and our ablest minds are therefore ever intent on the investigation of the *modus operandi* of organs with a view to its correct solution. This has led to the performance of many experiments on the living body, some of which have partaken of much cruelty,

and are therefore justly to be condemned. Others, on the contrary, were both legitimate and necessary in the infancy of medical knowledge, and these, when properly conducted, threw new light on abstruse points of physiology. But these ends having been obtained, is it right to continue to torture the lower animals under the plausible plea of still furthering the ends of science, and diminishing the sufferings of disease? We answer, no! It is the end alone that can justify the means. We therefore rejoice, that in this country the day has arrived when not only the public voice, but the voice of scientific men, is raised against vivisection. What has been but the too frequent result of analogous vivisections carried on by different experimenters at one and the same time? Why, that conclusions the very opposite of each other have been drawn; and what, we may again ask, can more plainly show the fallacy, as well as the cruelty of these operations? When a poor animal is writhing under a surgeon's knife, all the various functions of life are disturbed and disarranged, and the wonder is not that different results have followed, but that any correct deductions have ever been arrived at by such means.

We rejoice to know that we have it now in our power to lessen suffering by the employment of anæsthetic agents in the daily pursuit of our practice, and that veterinary surgeons, much to their credit, have given free use to these as a means of diminishing pain. Scarcely an operation of importance is now performed by them without the patient being first brought under the sedative influence of ether or chloroform. This speaks well for the profession, and it may be averred that veterinary science has thereby proportionably risen in public estimation; a circumstance which you, as students, should not lose sight of. Depend upon it, that humanity to animals is a true index of a noble mind, and this, when seen to be in daily operation, will be appreciated by those you look to for support.

Besides vivisection, it has been attempted to unveil intricate points in general physiology by the exhibition of medicinal substances. Such a course of procedure upon the whole is not open to the same abuse as vivisection; nevertheless, it has often been abused by unnecessary repetition, and far more frequently, perhaps, by the exhibition of agents positively destructive to life. The remarks we have made in opposition to vivisection, will apply equally to such a mode of investigating the operations of vitality upon the animal organism. Closely allied also to this method of studying physiology is the subjecting of animals to the influence of

different gases, either singly or combined. By so doing, a new light has been thrown on many of the operations of nature, and valuable pathological facts have been deduced with which we ought now to be content. Unless, however, it should be inferred, from the observations I have made, that I am opposed to any further experimental inquiries, it may be as well for me distinctly to state that no such sentiments pervade my mind. But I ask for poor dumb brutes, over which be it remembered man holds but a delegated power, the exercise of feelings of compassion for their sufferings akin to those bestowed on fellow-man; and I desire to raise my voice against the repetition of needless and cruel experiments.

I come next to chemistry, as a science to be used for the unfolding of physiological phenomena. This is, indeed, a Herculean power, and, as employed in this institution, of the greatest import to you, for its laws are here investigated and explained with a view to the accomplishment of this end. By observing that an animal body is composed of a few simple elements, of which it is the sole property of this science to demonstrate the inherent properties of, we at once set forth the value of chemistry as applied to physiology. Of late, it has been the custom to speak of organic chemistry as a special branch of this science, from its application to the purpose we allude to. Doubtless its value will appear yet more and more; but some, we fear, in their search after knowledge, are too apt to lose sight of the operations of the vital force as a controller of chemical action. "It is a great thing," writes a distinguished member of the medical profession, "to be able, as we now are, by the aid of organic chemistry, to trace each act of the metamorphoses which the materials of the body are continually passing through; to be able precisely to define what becomes of the saccharine and fatty principles of the food; to be able to follow the albuminoid matters, the phosphorus, the earthy, alkaline, and metallic salts; to have a clear perception to what particular class of organs they go; how they are used up in the production of different kinds of force, or in the formation of various secretions, and finally, to find in the very *débris* and excreta of the body the sure and certain measure of the vital action itself."*

Thus you perceive, that to be physiologists you must first be chemists, and without you are both these, you can never become pathologists in the strict and proper meaning of the term. Time, however, warns me to proceed, and I shall

* 'Hunterian Oration,' by R. D. Grainger, F.R.S., 1848.

next call your attention to microscopical observations, as an auxillary to your studies. It is now an almost universally admitted fact, that the use of the microscope has conferred a great and lasting benefit on medical science in general, and especially on physiology. We are enabled by its employment clearly to comprehend many things which before were enigmatical. Digestion, secretion, nutrition, absorption, and other vital functions, no longer rest on mere hypotheses for their explanation. The microscope may be said to have disclosed, in so many instances, the intimate structure of the organs concerned in these processes, and to have shown that organization is altogether independent of vascularity; that the vessels are but the conveyers of the raw material, as it were, in the form of fluid blood, and that nutrition, secretion, &c., depend on the law of endosmotic action and cell-formation. This instrument may therefore be said to have gone further towards the elucidation of physiological truths, than even organic chemistry—valuable as it is, and ever will be. Nor does the microscope stand second to any other means in the study of either anatomy or pathology. No dissection, however minute, is at all to be compared in beauty or delicacy, to well-prepared microscopic sections or injections. Besides it has this advantage, that while it enlarges our ideas, and opens up to our view a new world of wonders, it so simplifies everything, that the commonest understanding can readily imbibe the greatest truths.

From these considerations, I pass to the third element of veterinary or medical science,—pathology, or the nature and causes of disease. As you may anticipate, your teachers will give to pathology all the consideration in their power, both in the lecture-room and the hospital of the institution. The practical tendency of the varied means of acquiring knowledge, which I have previously named, is to the better understanding of disease. There are, however, some things which have a more immediate and direct bearing on pathological science than others, and among these may be named *hygiene*, or the preservation of health; and *therapeutics*, or that which relates to the treatment of disease. Hygiene, I fear, has not received that amount of attention from us, as a profession, which it deserves. Remember, it is not only the province of the veterinary surgeon to use his utmost endeavours towards the removal or mitigation of disease; but equally so for its prevention. How much good will he effect, and how much will his reputation be raised, if, by the study of the laws of epizootics for instance, he is enabled to arrest the progress of but one of these destructive pests? These

maladies too frequently assume a fatal character, and the medical attendant is often twitted for incompetency, because he cannot do impossibilities and save the death-struck victims. See the superiority of his position, when by his advice a limit is put to the spread of the disease, and lives of numbers of animals are thereby saved. Epizootic affections of late years have again excited much of the public attention from the frequency of their occurrence. It is unnecessary to say anything of those known to us as pleuro-pneumonia, influenza, eczema, and variola. We have, if I may so express it, too familiar an acquaintance with them; but there is another which now threatens to invade our shores, and which will, I fear, should it make its appearance here, prove destructive beyond measure to our herds of valuable cattle. It appears from official reports which have reached our government, that this disease has raged in Poland to a fearful extent, bidding defiance to all preventive means adopted by the Russian government to limit its spread. Nor has that country been alone affected; Hungary, the Danubian Provinces, Turkey, Southern Russia, and the Crimea, have all suffered considerable losses. In a communication made last year to the *Times*, by its Special Correspondent, it is said, that in nine months the French lost 8000 bullocks out of 17,500, at Samsoun alone; and, that we lost 4000 out of 10,000, at the same place, from this disease. At this time, there are also too many reasons to fear that the malady has reached the kingdom of Prussia, having made its appearance at Mecklenburg. Mr. T. A. Blackwell, the British Vice-Consul at Lübeck, writes, that "the Lübeck government had issued sanitary regulations, to be enforced in case the disease should appear in that territory, and as a precautionary measure, had enjoined that no horned cattle should be allowed to enter it from the Duchies of Mecklenburg-Schwerin and Mecklenburg-Strelitz, except such as were certified by competent authorities, to be entirely free from the disease;" and he adds, "I am impressed with the conviction that the measures adopted to prevent the introduction of this fatal disease, or murrain, into a given country, cannot be too stringent or too rigorously enforced." From the authors which Mr. Blackwell has consulted, he learns that the affection is called, among other names, in German, "*Rinderpest*." He says, that it might appropriately be called the *Steppe Murrain*, as "the original seat of this fatal disease is the steppe land of Southern Russia, where it first appeared, or at least was first noticed, and scientifically described towards the middle of the seventeenth century, since which it has

been endemic among the horned cattle of the steppes, both of Russia, Siberia, and Tatar, and has at various times become epidemic, and spread to Hungary and Poland, and thence to Germany and Western Europe. It has been calculated that during the last century alone, this disease carried off 28,000,000 head of cattle in Germany; and in the whole of Europe (including Russia, but exclusive of Siberia and Tatar), upwards of 200,000,000. It has frequently prevailed in the Duchies of Schleswig and Holstein, especially from 1774 to 1781, when 150,000 head of cattle perished. In 1813, it again broke out in the Duchies, but was speedily checked and eradicated by the stringent measures and police regulations adopted by the Danish government." It further appears, that the mortality averages 50 per cent. in the steppes of Russia, and in Germany 80 to 90 per cent. No doubt seems to exist with regard to the contagious nature of this disease in the minds of those who are practically acquainted with it, and that its extension depends on this circumstance as well as on the hidden causes of epizootics in general. From the account given of its symptoms, progress, and fatality, we can scarcely question that the malady is identical with that which Dr. Layard described in 1757-8, as having proved for several years so destructive to our herds, costing the country year by year not only the lives of thousands of its cattle, but the treasury tens of thousands of pounds, to meet the losses sustained by the owners of the animals; the government of the day providing that a sum not exceeding forty shillings, should be paid for every infected beast which was killed directly upon the appearance of the disease. If in those times, when the importation of cattle into our sea-girt isle was jealously guarded against by high protective duties, the disease made its appearance here; can we reasonably expect it will be otherwise now that these duties are removed, and it has become a matter of necessity, as well as policy, to allow the free entrance, among others, of each kind of animal used as food for the people?

With such facts before us, with reference to the losses sustained from only one epizootic, we believe that we have placed in the clearest possible light the necessity of hygiene to the veterinary surgeon.

We shall now pass to another collateral branch of science, which is likewise intimately connected with the prevention of disease, namely Botany. My views, in common with some others of my colleagues, have been so frequently expressed with reference to botany forming an integral part of the curriculum of your studies, that it is unnecessary to repeat them

here. Every day's experience convinces us more fully that disease and death are often to be referred directly to the food partaken of by animals. How could we expect otherwise, seeing that we have chiefly to do with herbivorous animals, and that very many plants indigenous to the soil are springing up with their ordinary food, which possess not merely injurious, but positively poisonous, properties? Instinct doubtless leads, as a rule, to an avoidance of these, or their baneful effects would be increased in a ten-fold degree. The annals of veterinary medicine are replete with instances of this kind, and the pages of the *Veterinarian* in particular, have of late contained many similar cases. It may be, perhaps, that Nature, ever wise in all her operations, teaches us, by the free dispersion of such plants, that we possess a ready means to the removal of disease, in some of its varied forms, in different animals; it being an oft repeated axiom that what is food to one creature, is poison to another. Be this as it may, we see enough in the circumstance to prove that botany is so intimately connected with pathology, and has such a direct bearing on the progress of veterinary medicine, that ere long it must form a part of the student's education. There is yet another and important view to be taken of this science in its connection both with vegetable physiology and chemistry as applied to agriculture, which is the probability that the present system of raising large crops from the soil by the use of artificial manures is productive of disease to animals feeding thereon. Plants may be brought into a state of plethora which will as completely unfit them, when in that condition, for food, as animals similarly placed are unfitted to undergo exertion, without the occurrence of disease. Besides this, plethoric animals, as is well known, are more susceptible to the influences of all the ordinary causes of disease, and experience is proving that plants quickly forced to maturity are similarly circumstanced. It is vain to suppose that the health of animals can be long maintained when they are fed on diseased vegetables. We would not, however, by these remarks be understood as objecting in the abstract to the employment of artificial manures, but rather to offer a caution against the too free and frequent use of them to such plants as are given in their crude state as food to sheep and cattle. We know full well the pressure which is put upon the farming community, and that an agriculturist is to be regarded as a manufacturer of the raw materials, whence we derive our bread, our meat, and in a great measure our drink, and our clothing. Such being the case, his proceedings, to be attended with success, now that he has to compete with a cheap labour market, and the serfdom of the world, must be

regulated by commercial principles. The battle of freedom and liberty against oppression and slavery is being fought in his person. He has therefore to raise from the soil, for the supply of the home market against foreign competition, the largest amount possible of produce at the least expenditure of time or money consistent with the amount of return. To do this, all ready means of cultivating his land by machinery, so as to bring it quickly into a fitting state for the reception of the seed, to hasten the growth of the plants, and to gather them in when ripe, have to be put into requisition, at a heavy and permanent cost. His land must not be idle, and therefore his employment of manual labour also, at certain periods, has to be unrestricted, while he must be ever on the watch to direct it into that channel where it will yield the quickest return. The immediate result of all this is the production of a greater quantity of corn and other produce as food, both for man and animals. Man is thus directly supplied with the raw materials for his bread and beer, but he wants also both meat and clothing. To furnish these the manufacturer, or agriculturist if you like, must either rear or keep large numbers of sheep and cattle. These have likewise to be of the kind which will come soonest to maturity, or accumulate flesh and fat quickly; so that there may be neither waste of time, nor of provender in bringing meat at once into the market, and also the raw material for clothing. Thus we see that the raising of a large produce necessitates the keeping of a corresponding quantity of stock, and these in their turn, by the consumption of the hay, the straw, and the root-crops of the farm, give back to the land an increased quantity of manure. Good cultivation and the feeding of animals having a mutual dependence or reciprocity, thus go on hand in hand together, acting and reacting on each other. But experience has shown the absolute necessity of recourse being had to means which lie extern to those immediately at the command of the agriculturist to secure the desired end. It requires little discrimination to see that *ab initio*, one scale of the balance must preponderate, it matters not which, and therefore he has either to give heed to the purchase of artificial manure for his land, or artificial food for his stock; and this primary essential once begun, to secure all its advantages it must be continued. To what extent he can safely go in the use of such manures, is the great problem that has now to be solved. It is only by dear-bought experience that a solution of it can be acquired by the agriculturist. To save him this cost individually, and to secure wealth to the nation collectively, the agricultural

chemist, the botanist, and the veterinary physiologist must co-operate, each aiding the other. But I would ask, Why may not all these be united in the person of the veterinary surgeon? and if he be instructed in general chemistry, why should he not be in agricultural chemistry? if in animal physiology, why not in vegetable physiology? Take notice of these remarks, and turn your attention to these things by self-culture, until the day arrives when they shall form part of the curriculum of the instruction of this Institution. Of the existence of the fact of cattle and sheep in particular, being injured by the too *free* use of artificial manures to bulbous plants, there can be no doubt. Whether some of the compounds which are now vended under this name may be injurious, even if not used to excess, experience has yet to determine, as also whether they act by accumulation in an unassimilated condition in the plant; and the same means must decide whether those manures rich in ammonia act prejudicially when too freely employed, by forcing the plants into a plethoric, immature, ripe, and unhealthy state. These several causes may all more or less be in operation in individual instances. I incline, however, to the opinion that a difference exists in different manures with reference to their deleterious effects, but whether those manufactured on the mineral theory of Liebig, or those on the nitrogenized one of Laws, ought to be used with the greatest caution, has yet to be ascertained. Animals, when living on food thus raised, are not unfrequently attacked with sudden illness which is quickly followed by death; at other times the digestive organs are chiefly affected, when diarrhœa sets in, and relief is thus occasionally obtained. But if the cause is continued, this diarrhœa becomes chronic, the patients waste, and at length die in a state of inanition. Young sheep appear to be most liable to be thus affected; but they, like older ones, will often sink quickly, as if from apoplexy, shortly after being folded on artificially manured turnips and other similar roots. The post-mortem appearances in cases of sudden death indicate that some change—a chemical one perhaps—has taken place in the blood. This fluid is unusually dark in colour, partially coagulated, and accumulated in some of the organs of the body; the flesh is soft and flaccid, and the whole carcass goes quickly into decomposition. The details of numerous cases could be furnished were this the fitting opportunity. These, however, must now be left, it being the broad fact alone that I wish on this occasion to bring before you. Here, again, allow me to add that we see the absolute necessity of our studying the science of hygiene in all its varied branches.

With reference to therapeutics, and their bearing on pathology, it is only necessary to observe that it is to the principles of treating disease that your attention has to be given, not to the mere exhibition of medicines. Therapeutic agents used without judgment often augment the very affection they are intended to relieve. Some of you, I fear, may have come here fresh from the country, and well stored, as you believe, with a long list of remedies for particular diseases. Throw these to the moles and the bats. Earnestly apply yourselves to the *science* of medicine, and then you will never be at a loss as to what to do, or what to give. If you desire to be men of science, veterinary surgeons in the strict meaning of the term, you must do this. If charlatans, men of mere routine, then retain your bundle of receipts, and take your place among that now nearly extinct class of illiterate farriers and cow-leeches. Enough of this. Let us hope that your presence here this day is an assurance of your desire to rise in the profession you have chosen, and also an earnest of your success.

Thus far, gentlemen, have I gone, with a view of giving you an outline of veterinary science and its collateral branches, and it must long since have been evident to you that a division of labour is not only required, but that each of your teachers has enough to do in his particular department. Whether "the right men are in the right place," is rather for you than me to say; but this day I have leave and license to give free utterance to my sentiments; and therefore, uninfluenced by any other feelings save those of candour, and that honest friendship which should exist between those who have been so long associated together, I hesitate not to say that my colleagues one and all are not only specially fitted for the duties they have to perform, but that their time, talents, experience, nay health and strength, are all freely devoted to the cause of veterinary science and your success. On Professor Spooner, as heretofore, devolves the task of instructing you in the anatomy, physiology, and pathology of the horse, with veterinary jurisprudence and the principles of shoeing. On Professor Morton, to lead you through the fertile paths and mazes of chemistry, as well as along the somewhat rougher road of veterinary *materia medica*. On Assistant-Professor Varnell, to conduct you through the misty ways and intricate windings of practical anatomy. While on myself will devolve the duty of giving you all the information I am capable of on cattle pathology.

These, gentlemen, are the main divisions of the course of instruction you will receive, but there are others. Thus,

Professor Spooner, assisted by Mr. Varnell, will superintend the hospital practice, and be ever ready, in his forcible and convincing style, to explain the causes, nature, and consequences of each individual case of disease. Mr. Varnell, too, will give you valuable clinics day by day; and Mr. Morton be ever willing to aid you by his explanations of the laws of chemistry, and to counsel you by his good advice.

I have yet a few more things to place before you, and to say something also upon my own division of science, cattle pathology. It is this link which indissolubly binds our art to that of agriculture, and brings the practiser of each not only into daily contact, but friendly union. It is this bond also which unites the interests of the Royal Agricultural Society of England with those of this Institution. Notwithstanding these things, we are apt sometimes to complain of the little support which the agricultural community gives as a whole to this section of veterinary medicine. We should remember, however, that if interests so identical as these alluded to are even temporarily separated, they can only be so by some more powerful influence or force. What is there, it might be asked, so powerful to effect this as ignorance combined with prejudice? Village blacksmiths, cow leeches, herdsmen, and shepherds, are the representatives of this power on one side, and the uneducated, old fashioned, and needy farmers on the other. Happy it is that effects pass away more or less rapidly with the removal of their cause; for, were it otherwise, we should long since have despaired of seeing cattle pathology in its true position. Education, skill, and enterprise, have been for some time silently undermining this citadel; now they are openly attacking it, and ere long, its strong walls will lie mouldering in the dust. Remember, that anatomy, physiology, and the principles of pathology, form the vanguard of one ally; and agricultural chemistry, botany, with the laws of vegetation, that of the other. It is you, gentlemen, who constitute one division of the army, and will you as Englishmen turn cowards? No! Onwards, onwards, "Cry havoc, and let slip the dogs of war!" and Victory herself will place the conqueror's wreath upon your brow. The Royal Agricultural Society stands firmly by our side, and the same support which it freely gave at first in the maintenance of the lectures on cattle pathology it gives now. The liberality of this Society cannot be questioned, nor ought its intentions ever to have been. Besides its annual grant to this institution, it bestows, year by year, large sums of money as prizes for the best essays on subjects intimately connected with the ad-

vancement of our art. Many of these prizes have been contended for by veterinary surgeons, and not a few have found their way into their coffers; thus both increasing their wealth and their reputation. In such things as these, is a complete answer to those whose jaundiced eye has warped their better judgment, and who have said that all the society aims at is to make "every farmer his own cattle-doctor." Connected as I am with the society, I would rather put before you the opinions of my colleagues than my own on a subject of this kind. Professor Spooner, in his introductory lecture delivered at the commencement of last session, feeling the necessity of answering such an accusation, said "It is a satisfaction to me to be enabled to announce to you that the Royal Agricultural Society of England affords us the same hearty support as in previous years. It recognises the value of this institution, and the oneness of the object between it and the college. In proof of this, we receive from it an annual grant of £200, to be expended in lectures and demonstrations, having for their object the advancement of veterinary science. I hope we may long continue to deserve the support of this important body; for assuredly the best interests of agriculture are bound up with the interests of our profession. The breeding and rearing of stock of all descriptions; the importation of sheep and cattle, which is increasing enormously, as our population and means of transport increase, are matters not alien to the daily calling of the veterinary surgeon. Nor can his education or opinion on such subjects be regarded otherwise than with deep interest by the enlightened agriculturist. I regard our connection with this body as a happy alliance of powers, and as a means which promises to be of essential service to agriculture; while, at the same time, it immensely extends the usefulness and the field of veterinary science." Here then, gentlemen, I may safely leave this question. We have seen that the Royal Agricultural Society, in veterinary, as in all other matters legitimately coming within its sphere, acts truthfully to its motto, "Practice with science."

There is also another institution with which we are intimately connected, and which it behoves me to say a word upon—the Royal College of Veterinary Surgeons. We are honoured this day by the presence of the President, Secretary, and several of the members of the Council of that body; and I am sure that while you feel with me, that they thereby give us an assurance of their identity with the interests of our Alma Mater, you will join me in thanking them for being here on this occasion. It is not my intention to enter on the debateable subject of veterinary politics, or press forward the

views which we of this institution consider to be all important to the success of our art, both to raise its position in the scale of society, to accomplish the cordial co-operation of the schools with the body corporate, and to join in oneness of action as well as sentiment all its members. Suffice to say, that I still hold the opinion that all these, and more than these, depend on a firm union being preserved between the Royal College of Veterinary Surgeons, the Royal Agricultural Society, and the Royal Veterinary College. As a profession, there are but few honours or emoluments that we can look forward to as a reward for well-spent services. Some appointments, however, await those of you who, in addition to a practical acquaintance with your profession, possess industry, talents, and circumspection of conduct. These are chiefly to be found in the army, the artillery, yeomanry-cavalry, and East India Company's Service. Agricultural societies, too, have, some of them, their veterinary referee or inspector, whose duties are of the first importance both to the success and durability of these societies. Much responsibility, therefore, rests on the shoulders of the inspector in the assistance he gives to the judges at the annual exhibitions of cattle. The decisions on the correctness of the certificates with regard to the ages only of the animals are of the first consequence. Great frauds have been committed here, which this system of examination has well nigh prevented. Besides which, the inspector has to look to the freedom from hereditary disease in the several animals sent for competition, and to take care, in so far as he is concerned, that no prize is given to an animal which will hand down a constitutional defect to its offspring. Other duties no less responsible rest upon him in each of the departments I have named. Integrity and judgment are required in all. These appointments ought to be the sole right of the legitimate members of the profession. Therefore, those who have passed the examination of the body corporate, as constituted by Her Majesty's charter, should alone be eligible to possess them; and every difficulty should be removed which now stands in the way of this being accomplished. Break the triune union I have spoken of, and you crush to atoms the only pedestal on which you can rear your rightful position, independence, and success.

Time warns me to conclude, and I pass on to other matter, remembering that the chief object of an introductory address should be to encourage the younger pupils, point out the road of honour, and clear away some of the difficulties which beset his path. It is right then for me to name some of the books which you will find the most useful in the prosecu-

tion of your studies. Placing anatomy first, we have Percivall's 'Anatomy of the Horse,' which we may consider the text-book of the dissecting room. Beyond this there are no works to be recommended for their anatomical details, although in some few particulars they may excel Percivall's. Thus in Blaine's 'Veterinary Outlines,' Youatt on 'Cattle,' and also his work on 'Sheep,' you have several chapters devoted to descriptive anatomy which will be of material service to you. For general anatomy, 'Quain and Sharpey's Elements' is to be preferred to any other. Although professedly treating of the organization of man, the lucid descriptions it gives of the structure of the component parts of the body cannot but be of the utmost utility to you as veterinary pupils. Todd and Bowman's 'Physiological Anatomy' is also a work of much merit, and ought to be constantly referred to in your investigations. Wilson's 'Anatomist's Vade Mecum' must likewise not be lost sight of. The works on physiology are now so numerous, and all of such high order, that it is difficult to make a selection. Carpenter's 'Principles of Physiology, General and Comparative,' his 'Manual' also of 'Physiology,' and Kirkes's and Paget's, are among the most useful for your requirements. On surgery and pathological anatomy you should consult, among others, Miller's 'Principles of Surgery,' Bransby Cooper's and Liston's, with Druit's 'Vade Mecum,' Andral's 'Pathological Anatomy,' and Paget's 'Surgical Pathology.' To assist your chemical investigations, you have Brande's 'Manual of Chemistry,' Bowman's 'Medical Chemistry,' and Fownes's 'Manual,' *cum multis aliis*.

On veterinary pharmacy and toxicology, you will have no occasion to go beyond Morton's 'Manual of Pharmacy,' and his 'Toxicological Chart.'

The pathological works relating to veterinary science are no less numerous, and all in turn should be read by you. Coleman, Percivall, Blaine, Youatt, Turner, Field, Spooner, and Bracy Clark, are among our chief writers. Many others might be mentioned, but I have simply given the names of such as immediately occur to me.

And now it may be asked of each of you, have you come here prepared to grapple with all the difficulties which lie in the way of your obtaining a correct knowledge of the principles of the profession you have chosen? Have you been fitted by previous education for a study of this description? If so, lose no opportunity that is afforded you of obtaining information. Do not, however, depend too exclusively on your teachers, but investigate fully for yourselves each

subject as it comes before you. Study not merely its general principles, but all its details, for in them you will find matter of the first import to your future success in practice. Take notes of cases, therefore, as well as lectures, and compare them with the diagnosis, treatment, and result in each particular instance. Bear in mind that although the experience of after years may increase your skill in the treatment of disease, it can never compensate for neglected opportunities of obtaining, during your pupilage, a correct insight into the nature of the changes which are wrought by disease in the animal organism. Plant your standard high enough, and rather seek to aid the pathology of human medicine than fall short of information in your own profession. In all this, however, nothing is exacted from you which a man of ordinary ability and moderate industry cannot accomplish. Industry, indeed, will surmount most difficulties; and those of you who possess talent, but lack perseverance, will find yourselves outstripped in the race for honour and reputation. But all should remember, that the mere obtainment of knowledge sufficient only to pass an examination is of little worth. Labour therefore, even now, for a higher object than this—the obtainment of a diploma of public approbation, one which bears the signature of every right-minded and moral man. And then, in the language of an elegant writer and eminent surgeon: “If you will do all this, and ever be on the watch to increase your professional knowledge, by constant observation, by daily study and reflection; if you will never lose sight of the true and noble object of your profession; if in your intercourse with your professional brethren, and with the public, you will ever be guided by principles of honour and of candour, and by an abnegation of self-interest, you will live to be respected and believed by those who know you best, you will have the inward satisfaction of knowing that you pass an honoured and useful career; and, amidst all the trials, anxieties, and difficulties that will meet you in one of the most anxious and responsible professions, you will never have cause to regret the day on which you have become one of its members, or to envy those who follow other, and perhaps more prosperous, walks in life.”*

* Erichsen's ‘Introductory Address,’ delivered at University College, London, 1850.

Communications and Cases.

OBSTINATE CONSTIPATION OF THE BOWELS FROM IMPACTED INGESTA.

By J. TOMBS, M.R.C.V.S., Stratford-on-Avon.

January 18th, 1856.—An aged gray mare, while hauling bricks was taken ill. At 10 a.m. she swerved about, but by dint of whipping the wagoner kept her at work until 2 p.m. She was then removed to the stable, when she lay down immediately, and looked back anxiously towards her flanks. They gave her some *Ol. Terebinth.*, and at 4 p.m. I saw her. She was still lying down, and groaning from pain, and when made to get up became very restless, and pawed the litter. Pulse 60, and hard; but no tension of the abdomen was present. I was informed that she had voided *fæces* several times during the day, in small quantities at a time. I bled her, and administered an antispasmodic draught, followed by enemata; and also directed hot water to be continuously applied to the abdomen. At 8 p.m. the symptoms were much the same. The bowels had not acted, and the visible mucous membranes were highly injected. Upon examination *per rectum*, I could clearly ascertain that there was a large accumulation of hardened *fæcal* matter in the colon. I again took blood, had the epigastric region stimulated, and gave repeated doses of purgative medicines, with injections.

19th.—8 a.m. The animal is evidently worse; there is great tension of the abdomen, and she has not yet voided any *fæces*; she looks anxious, and is in great pain; lies down and attempts to roll; perspires very much; pulse 70, and weak; and will neither eat nor drink. The purgatives and enemas were continued, but without any avail; the pulse increased in frequency, the abdomen became more distended, and the pain more acute, until 7 p.m., when she died, without having had any action of the bowels from the time I first saw her.

Sectio cadaveris.—Stomach full of fluids and the medicines given. Small intestines highly inflamed in patches; omentum thickened and scirrhus in one place, showing an old disease; colon inflamed, and distended generally with hard *fæcal* matter, but in one part it was more stretched and diseased

than the other, and here there existed a collection of sand, gravel, and small pebbles, which was so tightly impacted in the gut that it was impossible for liquids or medicinal agents to have any effect upon it. This extraneous matter must have been in the bowels several days. I ascertained on inquiry that the last four days of her life she had been fed on bran and chaff; but before that she had been eating pea haulms, with which, in all probability, was mixed the sand,&c.

CASE OF ANASARCA OR INFLAMMATORY OEDEMA.

By the Same.

ON the 29th of June, 1856, I visited a black cart-filly, three years old, by request of a farmer in this neighbourhood. She had just recovered from the strangles, and was put to hard work on the 24th, but on account of being in a state of lassitude, she was left at home on the 27th. When I saw her, there were swellings in different parts of the body, especially between the fore legs, which extended to the umbilicus; also on the back; and the buttocks were so enormously swollen, that it was impossible to move her. The pulse was 64, and weak; the Schneiderian membrane pale coloured, with several red patches on it; the tunica conjunctiva of the right eye inflamed and much swollen, and from it a sero-purulent discharge took place; submaxillary glands enlarged. I resorted to such means as the symptoms present indicated the necessity of.

On July 1st, no diminution of the swellings had taken place; the animal could not lie down, and scarcely move. The eyes were glassy, yet the appetite was good; the breathing quick and short (indicating the existence of internal effusion); pulse 104.

These symptoms continued present until the 15th. In the mean time, by the aid of liberal diet, constant fomentations, alternating with evaporating lotions to the swellings, scarifications and the use of setons, followed up by the administration of diffusible stimulants and febrifuges, and, subsequently, a course of vegetable tonics combined with diuretics, all the unfavorable symptoms gradually disappeared; the swellings decreased, the respiration became tranquil, and by the 28th the pulse was at its natural standard; the Schneiderian

membrane had acquired its pristine colour; the animal was enabled to walk and to lie down, and is now (September 2d) at her daily work.

I think this case worthy of record, inasmuch as the pulse indicated great constitutional disturbance, and the embarrassed respiration internal effusion, which it was the object of my active treatment to prevent the consequences of.

ON POISONING OF PIGS WITH BRINE.

By the Same.

I PERCEIVE by the accounts published in the *Veterinarian* lately, that brine is a poison to pigs. In consequence, I am induced to state that I was asked by a farmer last spring (while attending a mare with retention of the placenta, and laminitis, which recovered), to see some pigs that had, as he said, a "bad distemper." He told me that already he had lost two sows and several little pigs. They were lying down and trembling, and when made to get up they could not preserve their equilibrium; they cocked up one fore leg, then the other; elevated their noses, which were of a blue colour; and then would stagger about and fall. The symptoms were indeed very similar to epileptic fits. Being, however, of opinion that the stomach was the original organ affected, with which the brain sympathised, I inquired if the animals' diet had been changed lately? The answer was at once in the negative. Nevertheless, I told the owner to make further inquiries as to the truth of this statement, and the result was that it was ascertained that the servant-girl had thrown the contents of the leaden salting-trough into the cistern, by which the brine had become mixed with the pigs' food. My impression at the time was that the brine had become impregnated with lead, which caused the symptoms above described. By an alteration of the diet, and the exhibition of purgatives, with new milk, which the pigs drank freely, they soon all got well.

COMMUNICATION

From J. HAWTHORN, M.R.C.V.S., Kettering.

To the Editors of the 'Veterinarian.'

SIRS,—Your kindly notice of a trifling communication which I sent to the *Veterinarian* at the beginning of the year has reminded me that I promised a few more cases. I therefore venture to send the following.

To the veterinary establishment in Camden Town I shall always feel myself highly indebted, and I entertain great respect for the memory of Professor Coleman, my late teacher, and shall be very happy at any time to contribute to the amusement, to say nothing about the improvement of the profession.

The first communication I shall entitle

“TOO MUCH SCIENCE.”

Some years ago one of my employers sold a horse as a hunter for the handsome sum of £120. He was a good fencer, and could gallop pretty well, but had no breeding. In the course of two or three weeks the seller had notice of a return on account of a corn, and consequent unsoundness. He therefore wished me to go with him to see the horse, and make some arrangement, telling me he could not take him back again, as it would be inconvenient to return the money, and further stated that he knew of no corn existing at any time. I met the veterinary surgeon called in by the buyer, and had the horse trotted out. He went sound. I next tried the heels with pincers and with a hammer, but there was no tenderness or flinching. His shoes were then removed, and with some difficulty a small spot was discernible where a slight extravasation of blood had taken place, and *this was the corn*. I said it did not deserve the name, and I would engage that every second horse in the stable should show as much; but, however, I was questioned in this way—Was not an extravasation of blood between the bar and crust a corn? Could any veterinary surgeon say on oath this horse had *not* a corn? and could I say the slight corn he had would not make him more liable to have a worse corn than if all was perfectly right? Of course I was obliged to say he had a corn; but it ought not to be called an *unsoundness*.

The purchaser was a clever, keen man, and I saw I could not get on. I then asked him to settle the matter with me, which, after a good deal of talking, was done in the following manner: he was to take the horse as he was, and to give £80 instead of £120 for it. It was very reluctantly agreed to, but my employer was satisfied, as he knew he had sold the horse well and the return would spoil his future sale. Moreover, he could not spare the money, and do what I would, I was not to take the horse again.

Now in this case I think science was pushed too far, so as to interfere with practical business, and to create a prejudice against veterinary examinations. No practical man, if he had seen the foot, would have refused to buy a horse with such a corn as that, as good ordinary shoeing would soon have got rid of it. The same scientific argument might be used against the smallest splints, or the smallest curb, or the smallest windgall, or the smallest thorough-pin, &c., &c. I cannot think of anything at present which so much resembles a "corn" in a horse's foot, as extravasation of blood from a bruise under the nail of the human hand, and I have often had a worse "corn" of this kind than this horse had. It is true, I believe, that veterinary surgeons seldom take off the shoes to examine a horse for corns, but can an examination without it be complete? I think not. Might it not be imperative that buyers should have the shoes taken off, the seller or his agent being present? and if the buyer is satisfied, then nothing more should be said about corns. Two removes would cost but sixpence, the time required a quarter of an hour, and the shoes might be put on again, the nails being put in the old holes. If the buyer wished to dispense with this he should take the responsibility.

There are many causes of dispute about horses which might be removed and the law made much plainer, which, from my own observation, would give satisfaction to the dealer and purchaser, and the veterinary surgeon would be relieved from much harass and responsibility. Could not a number of experienced veterinary surgeons, say from forty to sixty years of age, who had seen full practice, revise the whole matter of soundness and unsoundness, and that in such a manner as to reduce the number of disputes which now make horse-causes a by-word and a disgrace to all parties?

Soon afterwards another employer sold a horse to a member of the veterinary profession. In two or three weeks the seller received notice of a return for a "corn." I strongly recommended him to write and say that as he (the buyer) was employed by others, and paid to examine horses, he

ought to have known whether the horse had a corn or not when he bought him, and that he was never known to have one; further, if the horse was returned he should resist it, and employ every veterinary surgeon he could get at to aid him. No more was heard of this case. The only defence I can think of was that the buyer (although a V. S.,) did not take off the horse's shoes, a practice which, as I before stated, ought to be universal.

ON THE USE OF THE CANNABIS INDICUS IN TETANUS.

By J. W. JEFFERY, M.R.C.V.S., V. S. 4th Bengal Cavalry (Lancers), Umballah, North-west Provinces, India.

MY DEAR SIRs,—Having the pleasure of regularly reading the *Veterinarian*, in one of them a short time since I saw a case of tetanus in a mule, cured by Mr. Lepper, with the cannabis indicus. You must be well aware that veterinary surgeons in India know much more about this medicine, and also of many other drugs that are not used in Europe, than can be known at home respecting them. As it regards the cure of tetanus by cannabis indicus, I had a horse sent from the 2d Troop, Regt. No. 144, to the hospital, suffering from idiopathic tetanus. The animal the day before had come in from detached duty.

Symptoms.—General rigidity of the muscles, causing a stiff gait in walking; under excitement the membrana nictitans would be forced over the eyes, and the tail become tremulous. The mouth, fortunately, was not quite closed, and my darogah having a small hand, was enabled to give the animal a ball. Pulse 50, and full.

Causes.—The prevalence of east winds; the days being very hot, and the nights rather cold, especially towards the morning. The horses have no stables in my regiment; I have only a hospital stable with room for twenty-two horses.

Treatment.—April 10th, 1856.—Gave

Aloës, ʒv.;
Ginger, ʒj;
Croton Oil, m̄v, made into a ball.

11th.—The horse purged, but the symptoms remained

the same. He is in a loose box, which is kept dark; his syce only attends him, and no one else is allowed to go near him.

12th.—Physic setting; food and water always kept near him.

13th.—Gave four drachms of *cannabis indicus* in leaf, mixed with the horse's food, twice a day. This stupefied him, and acted as a strong narcotic. Continued daily this dose for a week, and could see but little alteration.

20th.—Gave three drachms of the leaf in his food twice a day for a week; during which the horse became better.

28th.—Gave two drachms twice a day, as before; animal still improving, and he eats and drinks well.

May 8th.—Gave one drachm in his food daily, for a fortnight; and on the 23d of May, the horse was perfectly well. Walking exercise allowed twice a day, mornings and evenings. I kept him in the hospital until the rains set in, and he was discharged on the 23d of June in good condition, since which he has done his work regularly and to my satisfaction.

CASE OF TETANUS.

By R. H. DYER, M.R.C.V.S., Waterford.

ON the 14th of August last, a brown gelding was operated on for a large node situated immediately under the knee on the left leg. The operation was that of subcutaneous periosteotomy. All apparently progressed favorably for some ten days after, when my patient was attacked with distemper. It was so severe that the cough attending it seemed to produce most distressing pain of the abdomen. The poor horse would cringe when in the act of coughing, and the sound produced by the cough was very deep and sonorous. Occasionally, I stood for some seconds watching the poor beast in his sufferings, and could not help remarking the peculiarity of the cough, as well as the particular expression of the countenance. All the cases of distemper at this period had a similar cough. Its peculiarity could not be mistaken for that of ordinary distress.

In the course of a few days, the symptoms of distemper passed away under my treatment. On the twenty-second day after the node was cut down upon, it was perceived that symptoms of trismus were present. The animal's morning

feed had not been consumed, which led me to make a careful examination of my patient, when to my surprise, I found that general tetanus had set in. I lost no time in employing the usual remedies; attended to the node upon the metacarpal bone, and did everything else which I thought calculated to be of service. The case continued for three days, my patient getting gradually worse—hourly; indeed. All hopes were over from the first, as I believed the horse always, even during health, had a peculiar tetanic appearance, his movements being stiff, stilty, and ungraceful. The termination of the complaint was therefore anticipated.

The animal died on the morning of the third day after the attack. The following morning I examined the chest. The heart, to use a phrase employed by the knacker, was as "*flat as a pancake*." It was soft, and *nearly white* in colour, and contained no blood; the lungs were full of blood, and black in colour; the intestines were much inflamed; the stomach, all around the border of the cuticular coat, near its junction with the mucous coat, was eroded, like a net-work, this being produced by bots. The horse had not had any metallic preparation administered to him whatever, so that we must look to these parasites as the cause of these appearances.

The part of the leg operated upon was healthy.

According to medical writers, either of the above diseases would produce tetanus, but I leave your readers to form their own conclusion.

CASE OF PUNCTURED FOOT, AND FRACTURE OF THE NAVICULAR BONE.

By J. BROWN, M.R.C.V.S., London.

ON Tuesday, October 9th, 1855, I was requested to see a bay mare belonging to a town carman, which, they said, had been kicking violently in the cart—(this she was in the habit of doing)—and had lamed herself. I found, upon examination, that she had picked up a large, rusty, carpenter's-nail, which had entered the inside of the off hind foot, near the point of the frog. It had penetrated a considerable depth; the pulse was quick; the pain and lameness considerable. I at once had the shoe taken off, and the foot well pared out all over. A great deal of bloody serum escaped from the wound. The foot was then soaked in hot water for

some time; after that the wound was dressed with digestive ointment, and the foot inclosed in a large poultice, which was ordered to be kept well bathed with hot water several times a day. The diet to consist chiefly of bran mashes, so as to prepare her for a dose of purging medicine the next day.

October 10th.—The animal seemed a little easier. Dressed the foot as yesterday, and gave her three drachms of aloes, with the like quantity of gentian powder.

11th.—Bowels acting. Repeat the dressing as before. This treatment I pursued daily, and she seemed to be gradually improving until the 27th of October, when she appeared to be in more pain, and a swelling presented itself round the coronet, with a disposition to break out on the outside of the foot, which rather surprised me, as the nail had penetrated on the inside. I had the foot pared out thin, and let out a little more bloody serum from the wound. The foot was again soaked in hot water, and dressed as before. The animal's appetite up to this time had been tolerably good.

30th.—I was sent for in great haste, the messenger saying the mare was dying. I immediately went, and found her in great pain, and bathed in perspiration; the respiration quick and laborious, and the countenance very anxious. She was standing on the lame foot. This I thought no good omen, and I pronounced the case to be hopeless. She being, however, a young mare, the owner was desirous that I should continue the treatment a little longer. I therefore had her suspended in slings; and, after soaking the foot well in hot water, dressed the wound with a mixture of opium and digestive ointment, and inclosed the whole in a poultice as before. Restricted the diet to mashes.

31st.—Dressed the foot as before, and gave her three drachms of aloes in ball. She seemed easier, and there was a more healthy discharge from the bottom of the foot.

November 1st.—Purging freely. Repeated the dressings. Whilst I was there she dropped down suddenly in the slings, and slept soundly for about a quarter of an hour. She then as suddenly raised herself up and began to feed. This she did every day after I had dressed her foot, and sometimes before I had finished doing it, she would drop suddenly down in her slings, and sleep for about a quarter of an hour, and then rouse herself and begin to feed. Her appetite was tolerably good even now, and continued to be so till within a day or two of her death.

It is needless to describe the treatment which I pursued further. She seemed one day to be better, and another day

worse. I of course varied the treatment as I thought the circumstances required, and persevered daily until the 24th of November, when I saw no hopes whatever of her recovery; and the owner now coinciding with me, we had her killed.

Examination after death.—The coffin-bone on the inside, where the nail had penetrated, was a little discoloured, and the navicular bone was found to have been fractured on the outside. The preparation of this is, through the kindness of the secretary, placed in the museum of the Royal College of Veterinary Surgeons.

CASE OF URINARY DEPOSIT.

By G. EVANS, M.R.C.V.S., Bridgenorth.

DEAR SIR,—I thank you for microscopically examining the sediment of the urine I sent to you. I send you the following account of the case in which it occurred, because you have wished me to do so; at least, it appears to me that I am one of those alluded to on the cover of your last number, who have sent to you somewhat incomplete cases.

On July 13th, I saw the horse for the first time. He was then so weak that he could hardly stand; laid down a good deal, and was as thin as any gipsy horse I ever saw in my life; rough coat; anxious expression of the countenance; he often looked at his sides, and the owner complained that “he staled very badly, voided little at a time; not very often, and there was no pain in the act of doing it.” As he did not attempt to stale while I was there, I passed the catheter into his bladder, and withdrew about a pint of urine, of a yellowish straw-colour, slimy, which deposited some lime salts, which you say “chiefly consisted of carbonate of lime, crystallized in somewhat an unusual form, and some of the phosphates were also present.” As to the quantity then, it was nothing compared to what we often see in apparently healthy urine. The bladder, ureters, and urethra, were, as far as I could make out, all right. There was slight flinching upon pressure being applied over the region of the kidneys, and I fancied more on the right side than on the left; but I did not put too much dependence upon that as I have seen it in some healthy animals. It only served to create suspicion.

History.—The animal is a five-year-old cart-horse, a violent worker upon a hilly farm and bad roads. He is always put

to the heaviest load, "for he will never give it up; he has sometimes pulled until he fell." The wagoner further said, "about four months ago, he had the 'belly-ache' after a hard day's work, and the master bled him until he nearly fainted. He, however, got well, and in about a month after he had a similar attack, and was bled again with the same result. His blood, both times, was a yellowish-white jelly, nothing like blood." After these attacks, his urine appeared to be altered in character: he voided but little at a time, and that of a light colour, and he also rapidly fell off in condition. Upon further inquiry, I learnt that during these acute attacks, he did not kick and tumble about, but "coiled himself up, the back being arched, &c." After this, I ascertained that several strong doses of brine had been given to him, which made him urinate more freely for a time; but he became much worse after. Nitre was also given with the same effect. No blood was ever observed in the urine.

Diagnosis.—I supposed those so-called "belly-aches" to be indicative of inflammation of the kidney, brought on by over-exertion, or, that a calculus had been forming in the kidney, and that the exertion had excited the pain. However, I believed that the function of the kidney had become impaired, which accounted for the alteration of the urine, and the wasting away of the animal afterwards; and the disease was accelerated by giving diuretics. If there had been an attack of acute inflammation of the kidney, probably a chronic one existed now, and perhaps an abscess or an ulcer. If there were a calculus, it might also be accompanied by an abscess or ulcer. There was evidently pain, shown by the animal's turning his head round with an anxious look at his sides so often; and this he had been in the habit of doing for some time. The liver and digestive organs seemed to perform their functions well; but the sympathetic fever had impaired the appetite. I therefore concluded that my case was one of chronic inflammation of the kidney, accompanied very likely with a calculus or an abscess.

Treatment.—Ordered calomel, with *small* doses of cantharides, so as to determine its action to the kidneys, and combine these with gentian and ginger to form a ball, which give every morning; but guard against producing diuresis.

Give as little nitrogenized food as possible, for the kidneys are not able to expel the nitrogen from out the system. Let plenty of warm clothing be put over him, so that the skin may be excited to help the kidneys, and turn him into a loose, airy box, with plenty of warm bedding.

16th.—The pain has left him: he no more looks at his

sides ; the expression of countenance is less anxious, and the appetite has improved.

21st.—The pain has not returned, and the animal seems to be going on favorably. Continue to give the ball every morning, and administer a dose of sulphate of iron in the evening.

25th.—An œdematous swelling has made its appearance between the thighs and arms, extending to the abdomen, which is very painful, and the patient stands and will not move. The appetite is gone, and he is so weak and dreadfully thin, that though there is much inflammatory action going on, we cannot dispense with the tonics. Discontinue the calomel and catharides ; and instead, give

R Aloës Cape
Ferri Sulphat.,
Pulv. Gent. et
„ Zingib., āā ʒij, in ball,

every morning, with

Acid. Hydrochlor., ʒss,

in his water, during the day. Foment the swellings.

26th.—The inflammatory œdema is very severe, the swelling being extensive, and extremely painful, nevertheless, in spite of the inflammation, continue in use of the tonics. The bowels have responded. Continue the fomentations.

27th.—Animal much better ; the inflammation is subsiding, and the appetite returning ; pulse 80 yesterday, and 60 to-day. Continue the alterative tonics and the acid.

29th.—Pulse 35. The patient now walks about, and the appetite continues to improve. He staled freely once to-day. Treatment as before.

Sept. 10th.—Since the above report until now, the animal has continued rapidly to improve, and his owner told me to-day, he “ would not take £40 for him, as he will do more work than a horse of greater value.” He is in splendid condition, and his urine, to the casual observer, is apparently normal ; but I find on examination of it, that there is more lime in it now than at first, which confirms my opinion that a calculus existed, but it has been broken up by the acid, and its particles are coming away with the urinary secretion.

The treatment now ordered is, to discontinue the use of the tonics ; but give the acid as before. The dose has been gradually increased to an ounce every day ; it will soon be as gradually decreased.

TO PROFESSOR SIMONDS.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE, M.R.C.V.S.,

Professor of Anatomy and Physiology in the Edinburgh
Veterinary College.

(Continued from p. 585.)

A JOURNAL appears quarterly in Stuttgart, often quoted by us entitled—‘The Repertory of Veterinary Science.’ It is now in its seventeenth year, and Professor Hering, with whom it originated, is still its editor. Its most remarkable feature is the vast and complete collection of all the original matter contained in the contemporary veterinary periodicals that are issued in six different languages. The editor of such a journal must, of necessity, at the close of each successive year, have a most accurate and comprehensive knowledge of the progress of veterinary science; and that knowledge is availed of, for the compiling an invaluable section of an invaluable yearly report on the advances made in each and all the sciences that combinedly constitute medicine in its widest sense. Canstatt’s ‘Annual Report’ is edited by Hering, amongst others, and the article on ‘Veterinary Science for 1855,’ has but recently come to hand. In the introduction it is said that in 1855, as in 1854, but few works of importance and lasting worth have issued from the press; periodical literature has continued to improve. The works meriting special attention are as follows—‘Handbook of Special Pathology and Therapeutics,’ by Dr. Spinola, of Berlin; a similar work by Dr. Röhl, Director of the Veterinary School in Vienna. In French have appeared Chauveau’s ‘Anatomy,’ and Gourdon’s ‘Treatise on Surgery,’ both of which, when complete, will tend to enrich the French literature; second editions of Delafond’s ‘General Pathology,’ of Hering’s ‘Treatise on Veterinary Medicines,’ and of Percivall’s ‘Hippopathology,’ are mentioned nextly and lastly.

Hering goes on to say that he will have, therefore, to deal with isolated observations, the worth of which often seems but trifling; it is alone facts, either separate or accumulated in groups and series, that build the material which in due time acquires order and vitality from some leading idea, since its proper place is thus assigned to it, and with critical foresight.

In this manner an apparently unimportant observation may acquire incalculable worth; a well-known accident caused Newton to detect the law of gravitation, that dominates throughout the world. In the infancy of science we are satisfied with observations; later explanations are sought. Unfortunately, in medicine, the observer often starts out with a preconceived notion. He only sees that which corresponds with his opinion, and we must be content if nothing more is added to it; for this reason there are simple, complete, and trustworthy observations of lasting merit, which may be compared to a glass with facets reflecting light in different ways. Veterinary science is scarcely over that infantile condition, hence is so much observed, but little explained.

Under the head "Anatomy," in the Canstatt Report, several important things are alluded to. Goubaux has examined the anatomical characters of the nose in that singular breed of pointers whose nostrils are completely separated by a median groove of greater or less depth. The upper lip is also divided; and, as in the dromedary, each half moves independently of its fellow. The buccal orifices of Jacobson's organ are indicated by a tubercle met with in the triangular space between the two middle incisor teeth, that are broad apart at the base, but converge at their cutting edge. This is in consequence of the separation existing between the anterior mamillary bones. Each nasal bone, separated from its fellow, is furnished on the inner margin with a complimentary piece of cartilage, which gives to it a symmetrical appearance; and from this each nostril becomes distinct from its fellow. Goubaux has compared this condition of the nose with cases of hare-lip in man, but could detect no characters in common, and double-nosed dogs never have the fissured gums so frequent in hare-lip. See *Recueil de Méd. Vét.* for July, 1855.

Professor Müller, of Vienna, has described a true articular connection between the sacrum and iliac bones in the horse, dog, and ox. This arrangement has been shown by Luschka to exist in man. It is an amphiarthrodial joint, with cartilage of incrustation, capsular ligament, but little synovia. Although this joint is only of very limited action, it is important in the widening of the pelvis during parturition. See *Viertel jahreschrift für wissenschaftliche Veterinarmedizin.* Wien, vi, p. 34.

Professor Müller has also described the foramen of Winslow in the horse. I spoke of it in my essay on the abdominal viscera in 1852. Müller defines its situation with greater precision; it is between the spigelian lobe of the liver and upper surface of the colon, over the duodenum and bundle of

vessels which enter the porta; it is between the porta and posterior vena cava; it constitutes an opening of one or two inches in breadth into the omental sac. Through it, sometimes, a portion of the small intestine passes, and becomes strangulated and gangrenous. Hering says that, so far as he can remember, Prinz, of Dresden, first drew attention to this lesion. In the dog, the foramen of Winslow is larger in proportion, and admits of three fingers being passed into it.—*Loc. Cit.*, p. 38.

Hering has described the analogue of the cremaster in the mare. It is a distinct, slender, brownish-red muscle, beginning at the insertion of the broad ligament (just where, in male animals, the abdominal ring exists), and stretching within this fold to the ovary on the same side, the ovary naturally being the analogue of the testicle.—See the *Reperitorium der Thierheilkunde*, xvii, p. 16.

The inguinal canal in pregnant bitches.—According to Professor Müller, the round ligament of the uterus does not go only to the internal abdominal ring, but through the abdominal muscles (inguinal canal in male animals), and is lost in the subcutaneous cellular tissue; it draws with it the peritoneum, so that a reflection of this membrane is formed, analogous to that which descends in the shape of the tunica vaginalis round the testicle, and in the cul de sac thus formed a horn of the uterus may lie. If this becomes pregnant it gets further through the opening, and becomes subcutaneous. A few years back, Dr. Röhl described a case of such a hernia of the uterus before the Academy of Medicine of Vienna.

About the years 1832-33, my father saw a case of this kind in a bitch, the property of a Russian nobleman then passing through Florence. One pup was born dead, but per vaginam. It was supposed the bitch had other pups to be delivered of, but no physical exploration was made. On the fourth day from this time, she was first taken in labour, it was observed that she constantly licked the inside of her thighs. My father had been called in, and, on closely examining the bitch, found that the integument was sloughing on the inside of the thighs, and the sloughing surface on these extended from three to four inches in length to one or two in breadth, and beneath was a solid enlargement indicating the presence of a foreign body. My father made an incision, and removed two dead pups, which he found closely packed together, and lying lengthways, with their heads downwards. The parts healed with surprising rapidity, and the bitch recovered. Professor Müller's anatomical researches very fully explain this inte-

resting case, which I had always looked upon as one of impregnation of one of the horns of the uterus, that had protruded through the inguinal canal.

With regard to physiological researches, Hering notices at length an essay by my friends Chauveau and Faivre of Lyons, that I had for some time wished to bring before my readers. It refers to the movements and sounds of the heart. Twenty-six horses, ten dogs, and one monkey, were experimented on. In order to avoid the pain and struggling the animals were pithed, and artificial respiration was kept up; the action of the heart was observed by the removal of several ribs; the experiments would last in this manner for two or three hours at a time. It results that the dilatation of the heart is simply due to relaxation of the fibres, and the walls become flaccid and collapse; the systole is an active effort attended by rigidity of the muscular tissue when the volume of both auricles and ventricles is diminished, and the apex of the heart turns from left to right, and from before backwards. The heart's action may be divided into three periods:—the first when the auricles contract and the ventricles widen; the second, when the ventricles contract and the auricles open; and the third, is a period of general expansion or relaxation, when the cavities of the heart all fill. The contractions of the auricles drive the blood only feebly and in part into the ventricles, which by their closure propel it into the arteries; a portion, however, remains in the ventricles. The column of fluid within the arteries holding expanded the semilunar valves causes the blood wave to recede against the heart, and this is so neutralized by the shortening of the organ that the apex of the heart remains immoveable, whereas the base itself approaches the apex. Whilst all this is going on, the arterial trunks elongate and curve, and this brings the base of the heart back to its former place, when the systole ceases. The sounds of the heart occur through the expansion and closing together of the tricuspid valves. (Hering appends a query to this remark.) The contraction of the auricles is almost entirely unattended with sound; the first sound of the heart occurs as the ventricles contract; and the second, on the contrary, begins with the period of repose, or general relaxation of the heart. The heart beat occurs through the contraction of the ventricles when they change in form, and thereby an impulse is given against the surrounding parts, especially the wall of the chest, with which the heart is continually in contact.—See *Lyons Journal* for 1855, p. 537.

In an annual report for 1854, it was stated by Leisering

of Berlin that, from his observations, the pulse in stallions is slower than has been supposed, viz., from 26 to 34 beats per minute. Haider, of Munich, has enlarged these observations and finds that in fifty stallions, the average is from 29 to 30; the extremes were 25, which he observed four times, and 32, which he saw twice. In seven stallions the pulse was intermittent; in four cases at the third, in two at the fourth, and one at the eighth beat. The younger and more lively had a slower but fuller pulse than the older animals.— See *Thierärztliches Wochenblatt*.

Alteration in the diaphragm and chest during respiration.—According to Mignon the surface of the diaphragm is the most accurate standard of measurement for the extent of respiration, inasmuch as it forms the basis of the thoracic cone; the more the form of the diaphragm approaches the circular the better. In the horse, Mignon found that the cut through the perpendicular diameter of the diaphragm is 0.75, whereas the horizontal diameter is 0.85; in cattle, the measurements are 0.62 to 0.70. He is naturally speaking of the French metre. The relative extent of surface of the diaphragm in horse and cattle is as 16 to 10. A round chest is therefore more roomy than a narrow and deep one, contrary to the views maintained by horsemen up to the present day, who prefer the last-formed chest.—*Recueil de Médecine Vétérinaire*.

It would be of decided advantage were we able to measure accurately the size of the chest, but rather could we determine the chest capacity in animals. With reference to cattle, it is supposed the size of the chest and lungs has much to do with fattening qualities, according to Liebig's theory, that the less an animal breathes, the less carbon he consumes, and the quicker does he fatten. Thus, an ox with one lung will lay on adeps almost in half the time than if he possess both organs. Mr. M'Gilliveray, of Rayne, in Aberdeenshire, recently assured me that a careful experiment instituted by him proved this to be a fact. He was referring to cattle who, having been afflicted with pleuropneumonia, had lost the use of one lung. The conditions of existence in such an animal would be of sufficient respiration to arterialize blood for the wants of the economy during rest, but not sufficient for active exertion; and as all other bodily functions are unimpaired, so would the animal rapidly fatten. Admitting this, we must, nevertheless, caution those engaged in such inquiries by reminding them of one fact—that size of chest and lung has but little to do with chest capacity. Horses of very different shapes are equally

enduring, and if Mignon thought we discarded all horses that were round in the body, he is mistaken; and he is equally in error if he thinks we shall believe depth of chest as any other but a mark of excellent conformation. Tall men have a larger chest capacity than short, though their chests and lungs differ not in size. This depends on relative mobility. This is no proof that the first will endure most, and that the second are more likely to become corpulent. The whole of the points referring to conformation must be studied in determining the enduring or fattening qualities of any animal.

The round-bodied Swiss or French horse, will never have the chest capacity or power of endurance of the English racehorse, whom we view as possessed of the condition of tall, well-made men. Though we speak of a compact racehorse, it is true he will have a short back, but combined with length and depth of body to ensure what the horse-men would call room enough for his lungs and other vital organs to have fair play.

Analyses of urine.—Professor Fraas has made numerous observations and experiments on this subject that have led him to draw the following conclusions. Just after feeding, the horse's urine contains a moderate amount of sediment, which increases with exercise; it consists of bicarbonate of lime and a moderate quantity of magnesia. The ropy nature of the horse's urine does not proceed from the mucus it contains. Oxalate of lime is rarely met with in fresh urine, but frequently when it is old, or in a morbid state, or decomposing. Horse's urine that had been kept six months was jelly-like, and contained many crystals of oxalate of lime. The re-action of horse's urine is strongly alkaline, and the quantity of sediment varies from 0·9 to 1·8, and even 2·0 per cent. The strong alkalinity is due, according to Fraas, to cellulose, which in its newly-formed condition is fit for digestion by the herbivora.

The urine of cows is clear, but that of the working ox is not so; it contains so much hippuric acid which may be immediately precipitated by hydrochloric acid, and thus rendered tolerably clear; with five fluid ounces of hydrochloric acid, one pound of hippuric acid may be obtained, at the limited cost of three-pence.

In horses afflicted with Bright's disease of the kidney, said by Fraas to be very common, about six per cent. of albumen occurs in the urine, mostly in the shape of globules; the urine is then coloured red, and contains iron; there is about three and a half per cent. of urea, and the hippuric acid is wanting.

The obtaining of pure urea from horse's urine is rendered very difficult and uncertain by any resinous substance for which it may have great affinity. It is further remarkable that, in morbid states, the urine of the horse contains much chlorine, which it is difficult to detect by means of the nitrate of the protoxide of mercury test. From the sediment of filtered urine, Fraas found from four analyses, in 100 parts: lime, 0·770; magnesia, 0·158; sulphuric acid, 1·441; chlorine, 1·281; urea, 3·058; hippuric acid, 1·200; mucus, 0·243. The ashes of this urine (2 per cent.) yielded, in 100 parts—70 of potash and soda, 10 of sulphuric acid, nearly 8 of chlorine, besides some lime, magnesia, iron, and phosphoric acid. The urine of a horse with Bright's disease contained, in 100 fluid parts—7·406 of urea, 6·843 of albumen, 1·78 of chlorine, 0·686 of sulphuric acid, 0·245 of lime, 0·279 of magnesia; no hippuric, but traces of uric acid. The urine of a horse with effusions of fluid in the chest and abdomen contained 4 per cent. of solid matter, and 96 of water. Analyses proved the existence of 0·22 parts of uric acid, 17·0 of urea, 2·70 of incombustible salts, 20·08 of extractive matter and volatile salts.

The assertion of Fraas with reference to the chlorine of morbid urine is calculated to inspire great curiosity, as it is so opposed to what occurs in acute diseases affecting the human subject, when as in pneumonia, typhus, and such like, no trace of chlorine is to be discovered.

Fraas, moreover, speaks as if, under certain circumstances, he can procure the chlorine by means of the nitrate of the protoxide of mercury. This is difficult to understand, as the chloride of sodium and mercurial salts would mutually decompose. Nitrate of soda and chloride of mercury, both soluble salts, would be formed, and the analysis by this means not at all advanced.

I must not omit to point out that no advantage accrues by searching for the proportion of constituents of urine in 100 parts; it is only with reference to the quantities evacuated in a stated time, such as a day or a week, that interest attends investigations of this kind.

Facts and Observations.

ON THE TRANSFORMATION WHICH PROTOCHLORIDE OF MERCURY UNDERGOES IN THE ORGANISM.

M. BERTHES has found that if the protochloride of mercury—calomel—be subjected to the influence of an elevated

temperature for some time, and especially if in contact with alcohol and water, it gives rise to the formation of a certain quantity of the bichloride—corrosive sublimate. Hence he concludes, that it seems scarcely doubtful that this conversion is so much the more likely to be brought about in the organism, where it is subjected to a degree of heat approaching that necessary to effect the change (104° to 122° F.) in presence of the alkaline chlorides.

ON THE DEVELOPMENT OF IODINE.

LIEBIG states, that when the amount of iodine in combination is so small that the usual starch test only furnishes a doubtful coloration, a more decided result will be obtained by the addition of a trace of alkaline iodates with a little hydrochloric acid; a far greater quantity of iodine being liberated than existed in the iodate used. He has also found that starch water and hydrochloric acid alone, will often give a blue colour as deep as that obtained by means of chlorated water and hyponitric acid.

ON THE USE OF PLATINUM INSTEAD OF PORCELAIN OR GLASS, IN MARSH'S METHOD OF DETECTING ARSENIC.

DR. EDMUND DAVY finds that a platinum spatula held over the burning jet of arseniuretted hydrogen, as given off from Marsh's apparatus, is preferable to a piece of porcelain or glass, as usually recommended.

Depending on the distance which the spatula is held from the flame so will the deposit be either metallic arsenic or arsenious acid. If near, the former; if a little way off, the latter. The metallic arsenic adheres firmly to the platinum, but the heat of a candle is sufficient to volatilize it, when it is accompanied with its characteristic alliaceous odour, even when the quantity of arsenicum is less than the one-thousandth part of a grain.

If antimoniuiretted hydrogen be inflamed and treated in the same way, blackish spots of antimony are deposited, which are not removed by the flame of a candle.

He further adds:

"The advantages of the platinum surface over porcelain or glass appear to be pretty obvious. The former is more manageable for subsequent experiments. The arsenic strongly adheres to platinum, but weakly to glass or porcelain, from which surfaces it is easily removed by the finger. It is readily sublimed, producing the garlic-odour. There is

no ambiguity in the results; if antimony be present it remains fixed on the platinum. The apparatus I have employed is simple, a twelve-ounce phial, with a mouth about an inch in diameter, having a tight cork, furnished with a funnel tube reaching nearly to its bottom, and a small tube drawn out to a point for the discharge of the gas. The zinc I employed was in the state of small lumps or in grains, and the sulphuric or muriatic acid very diluted, viz. one volume of acid to from 15 to 20, and even 25 volumes of water.

Extracts from British and Foreign Journals.

HEREDITARY INFLUENCE, ANIMAL AND HUMAN.

(Continued from p. 595.)

THESE illustrations, apart from their interest, teach us to be cautious in generalizing from a few facts, however striking, in questions so complex as all biological questions are. Let us, however, continue to call on Mr. Orton for facts. He quotes a letter from Dr. George Wilson (whose opinion on any subject will be worth hearing) to Dr. Harvey, respecting the produce of the Manx cat and the common cat. The Manx cat has no tail, and is particularly long in the hinder legs. "You will see," says Dr. Wilson, "from the facts communicated, that where the Manx cat was the mother, the kittens had tails of a sort; where the Manx cat was the father, three fourths of the kittens had no tail." Mr. Orton also quotes a communication made to him by Mr. Garnett, of Clitheroe:

"From these I select those pertaining to the Muscovy duck and some hybrids produced between it and the common duck. You are aware that the Muscovy drake exceeds in a striking degree the duck in size; the drake weighing from 8 to 9½ lbs., while the duck weighs only from 3 to 4 lbs. Hybrids produced from the Muscovy drake and common duck followed this peculiarity of the male parent as to the relative size of the male and female hybrids; the male weighing from 5 to 6 lbs., the females not half as much. On the other hand, the difference in the size of sexes when the hybrids were the produce of the common drake and the Muscovy duck, was not apparent."

A valuable observation, certainly. Mr. Orton adds the following of his own. He placed a Cochin cock with his common hens:

"Reasoning that if the vital organs were due to the female, then the cross between these birds (being externally Cochins and internally common hens) should lay white eggs, the secretion of the egg being a vital function. You know that the Cochin lays a chocolate-coloured egg. The half-breed did what theory said they should do—laid white eggs; and not only white eggs, but eggs also which, on the evidence of myself and family, were very inferior in taste, having lost the mellow, buttery taste of the Cochin egg."

But he has recorded another curious fact respecting this same experiment, which might have made him aware of the problematical nature of his theory, had not his sagacity been hoodwinked by the theory:

"These same half-bred birds afforded another and a very unlooked-for illustration of the position we have taken. They were all, when first hatched, like the Cochin cock, profusely feathered on the legs and feet, so much so, that they had to be marked to distinguish them from the pure bred birds. We see here that, according to the law, the male parent implanted his characteristics; but what was curious, in a few weeks, in some of the half-breeds all, and in many most of the leg feathers were shed. Two out of some twenty birds only retained them in any very conspicuous degree. Now, why was this? The cock had implanted his external characteristics, the hen had given her vital organs. The feathers of the male were there; but the vital organs necessary to their growth were not there; and consequently, after a time, for want of nutriment, these feathers were shed."

We will not here enter on the question of the growth of feathers (a very complex matter), but, accepting his own premises, ask him, if the external characteristics are thus dependent on the vital organs for their growth and development, and these vital organs are given by the female, how does the child ever exhibit the characteristics of the male, after infancy? Of what use is it for the male to implant his characteristics, when the female influence is thus certain to annihilate them?

Mr. Orton further cites the practice of Bakewell with respect to his celebrated Dishley sheep. His rams might be bought or hired, for a good price; but his best ewes were sacred. These he would neither sell nor let.

As a counter-statement, let it be noted that, according to Girou, the farmers are more particular about the bull than about the cow when they want a good milking cow, for it is observed that the property of abundant secretion of milk is more certain to be transmitted from a bull than from a cow. We question the fact of the bull having greater influence than the cow, believing that in each case the property is transmitted according to direct heritage; but that the bull should be known to have any importance in this respect, is

an evidence that the "vital organs" are not solely given by the female.

The result of Mr. Orton's researches proves that the male *does* transmit his qualities to his descendants; as a matter of fact this must be always distinctly remembered; but neither his researches nor those of his predecessors suffice to prove this transmission to be *absolute*, in the sense required by those who maintain that the male gives the *animal* and the female the *vegetative* organs; as well as by those who maintain that the male influence necessarily and invariably predominates in the animal, the female in the vegetative organs. Still it is important to know that by the pollen of flowers we can modify the tints, and produce any varieties of tulip, violet, or dahlia; important to know that we can also modify the plumage of birds, and the colour of animals: it is important to know that the male qualities *are* transmissible. But for scientific rigour this is not enough. Before we can establish a law of this kind, we must be sure that the fact is constant and admits of no exceptions, or only of such apparent exceptions as may be classed under unexplained perturbations. Now daily observations, no less than recorded cases, assure us that the law is very far from being constant, that the female as unmistakeably transmits her qualities as the male transmits his, and that any theorist who should reverse the current theory and declare the mother bestowed the animal system, leaving the vegetative to the father, would be able to make a formidable array of facts. Let us glance awhile at the evidence.

It is said that the male gives the colour, but the female does so likewise. A black cat and a white cat will have kittens which may be all black, all white, or black spotted with white, and white spotted with black. Every street will furnish examples. Isidore Geoffroy St. Hilaire speaks of a case under his observation, of a black buck and a white doe; the first produce was a black and white fawn; the second a fawn entirely black, except a white spot above the hoof.* Burdach mentions the case of a raven and a gray crow, who had a brood of five: two black like the father; two gray like the mother; and one mixed. The same result is observed with respect to all other qualities. But perhaps the most decisive example we could quote of the twofold influence of parents is in the singular instance recorded by Buffon. The Marquis Spontin Beaufort had a she-wolf living in his stables with a setter dog, by whom she had two cubs, a male and a female. The male resembled externally his father,

* 'Dict. Classique d'Histoire Naturelle,' x, 121.

the dog, except that his ears were pointed and his tail like that of the wolf; the female, on the contrary, resembled her mother, the wolf, in all external characteristics *except* the tail, which was the same as her father's. Here in one case, the father gave the external characteristics, in the other the mother, while the tail was in each case, as it were, transposed. But the marvel of this case does not stop here: the cubs manifested a striking difference in disposition, in each case *resembling in character* the parent it did *not resemble in appearance* and in sex; thus the male cub, which had all the appearance of a dog, was fierce and untameable as the wolf; the female cub, which had all the appearance of a wolf, was familiar, gentle, and caressing even to importunity. Lucas records an analogous case. These hybrids are very instructive, because the wide differences in the aspect and nature of the parents enable us to separate, as it were, the influence of each. The wolf and the dog often breed together; and the following observations, interesting in themselves, will suffice to show the reader how much caution is necessary before drawing absolute conclusions from single illustrations. Valmont Bomare observed in the various hybrids of wolf and dog which came under his notice at Chantilly, a striking preponderance of the wolf over the dog; Marsch, on the contrary, observed in his experience a preponderance of the dog over the wolf; Geoffroy St. Hilaire and Pallas found the wolf to predominate; whereas, Marolle found the cubs remarkable for their gentleness and dog-like instincts, only recalling the wolf in their voracity and fondness for flesh. Girou found the preponderance to vary; sometimes the father, sometimes the mother re-appeared in the offspring. If there were no other evidence, this would suffice to disprove the hypothesis of either parent contributing one group of organs, to the absolute exclusion of the other parent.

The same fact of twofold influence is shown in the transmission of deformities, such as extra toes, extra fingers, &c.; sometimes the male, and sometimes the female is shown to preponderate, by the offspring inheriting the deformity of the male or the female. It is well said by Girou,* that "if the organization of the male was the only one which passed to the child, the child would resemble the father, as the fruit of a graft resembles the tree from which the graft was taken, and not at all the tree on which it was grafted." And what is here said of the whole organization, applies with equal force to any one system, such as the nervous or the nutritive.

* 'De la Génération,' p. 113.

Moreover, if the hypothesis we are combating be admitted—if the father bestows the nervous system—how are we to explain the notorious inferiority of the children of great men? There is considerable exaggeration afloat on this matter, and able men have been called nullities, because they have not manifested the great talents of their fathers; but allowing for all overstatement, the palpable fact of the inferiority of the sons to their fathers is beyond dispute, and has helped to foster the idea of all great men owing their genius to their mothers, an idea which will not bear confrontation with the facts. Many men of genius have had remarkable mothers; and that one such instance could be cited is sufficient to prove the error both of the hypothesis which refers the nervous system to paternal influence, and of the hypothesis which only refers the preponderance to the paternal influence. If the male preponderates, how is it that Pericles, who “carried the weapons of Zeus upon his tongue,” produced nothing better than a Paralus and a Xanthippus? How came the infamous Lysimachus from the austere Aristides? How was the weighty intellect of Thucycides left to be represented by an idiotic Milesias and a stupid Stephanus? Where was the great soul of Oliver Cromwell in his son Richard? Who were the inheritors of Henry IV and Peter the Great? What were Shakespeare’s children, and Milton’s daughters? Unless the mother preponderated in these and similar instances, we are without an explanation; for it being proved as a law of heritage, that the individual does transmit his qualities to his offspring, it is only on the supposition of *both* individuals transmitting their organizations, and the one modifying the other, that such anomalies are conceivable. When the paternal influence is not counteracted, we see it transmitted. Hence the common remark: “talent runs in families.” The proverbial phrases, “*l’esprit des Mortemarts*,” and the “wit of the Sheridans,” imply this transmission from father to son. Bernardo Tasso was a considerable poet, and his son Torquato inherited his faculties heightened by the influence of the mother. The two Herschels, the two Colmans, the Kemble family, and the Coleridges, will at once occur to the reader; but the most striking example known to us is that of the family which boasted Jean Sebastian Bach as the culminating illustration of a musical genius, which, more or less, was distributed over three hundred Bachs, the children, of course, of very various mothers.

Here a sceptical reader may be tempted to ask, how a

man of genius is ever produced, if the child is always the repetition of his parents? How can two parents of ordinary capacity produce a child of extraordinary power? The answer must be postponed until we come to treat of secondary influences. For the present, we content ourselves with insisting on the conclusion to which the foregoing survey of facts has led, namely, that *both* parents are *always* represented in the offspring; and although the male influence is sometimes seen to preponderate in one direction, and the female influence in another, yet this direction is by no means constant, is often reversed, and admits of no absolute reduction to a known formula. We cannot say absolutely, "the male gives such organs;" we cannot even say, "the male always preponderates in such or such a direction." Both give all organs; sometimes one preponderates, sometimes the other. In one family we see children resembling the father, children resembling the mother, and children resembling both.—*Westminster Review*.

(*To be continued.*)

EXTRACTS FROM A LECTURE ON STRYCHNIA.

By STEVENSON MACADAM, Ph.D., F.R.S.E.

(*Continued from p. 609.*)

THROUGH the kindness of Dr. Littlejohn, Lecturer on Medical Jurisprudence, I became part on-looker and part experimenter on a large dog, which had been seized and incarcerated by the Edinburgh police. The following are the doses, &c., given to

THE LARGE POLICE DOG.

	0 minute.	$\frac{1}{12}$ gr. of strychnine in bread-pill.
	15 minutes.	$\frac{1}{12}$ gr. " "
	35 "	$\frac{1}{12}$ gr. " "
	45 "	$\frac{1}{12}$ gr. " "
1 hour	15 "	3 grs. " on liver.
1 "	30 "	3 grs. " "
1 "	40 "	Symptoms of uneasiness.
1 "	45 "	Quick running motion—animal fell on its side—most violent tetanic spasms came on, accompanied by heavy breathings.
1 "	55 "	Repose.
1 "	58 "	Death.

The *post-mortem* examination was conducted under the superintendence of Dr. Littlejohn, and the parts were handed over to me. Strychnine was present in (1) the intestines, (2) the blood, (3) urine, and (4) muscle. In

this instance the strychnine-tests were very distinctly noticed, and it must be particularly observed, the stomach and its contents, as also the lungs, liver, spleen, heart, and kidneys, were not delivered to me.

These experiments on the HORSE and LARGE POLICE DOG satisfied me that an animal poisoned by strychnine in ordinary circumstances, will exhibit distinct evidence of the presence of the poison in the contents of the stomach, contents of the intestines, the blood, urine, and muscle.

Now it has been lately suggested that antimony in the condition of tartar emetic is capable of destroying, retaining, or concealing strychnine, in such a manner, that even where it has been administered as a poison, yet still, if preceded or accompanied by tartar emetic, the organic poison escapes detection. On this point I have made some experiments. Two healthy dogs were treated with tartar emetic for four days, receiving each a quarter-grain dose four times a day. On the fifth day, strychnine was simultaneously administered to both dogs. For convenience of reference I will designate these animals by their prevailing colour; the white dog and the black dog:

THE WHITE DOG.

- | | |
|------------|--|
| 0 minute. | $\frac{1}{2}$ gr. strychnine on liver. |
| 9 minutes. | The dog passed its urine, which was collected. |
| 17 „ | $\frac{1}{2}$ gr. strychnine on liver. |
| | The dog in attempting to seize this piece of liver, let it drop; it then licked off some of the strychnine and repeatedly attempted to snap up the liver, but could not do so. |
| 18 „ | Tremors—quick running motion—tetanic spasms and heavy breathings. |
| 31 „ | Repose. |
| 40 „ | Death. |

On being tested, strychnine was very distinctly observed in (1) the contents of the stomach, (2) the contents of the intestines, (3) the blood, (4) the urine, and (5) the lungs, liver, spleen, heart, and kidneys and muscle combined. The presence of strychnine in the urine voided only nine minutes after the first administration of the alkaloid, is worthy of special notice. This experiment demonstrated, that a preliminary treatment with antimony does not militate against the discovery of strychnine in animal matters.

The BLACK DOG, which had likewise been under antimonial treatment for four days, received its doses of strychnine, accompanied by extract of hemlock. The latter was given for the purpose of observing how far coniine might retard or relieve the spasms.

THE BLACK DOG.

- | | |
|-------------|---|
| 0 minute. | $\frac{1}{2}$ gr. strychnine, and 4 grs. extract of hemlock on liver. |
| 17 minutes. | „ „ „ |
| 30 „ | „ „ „ |
| 33 „ | Tremors—tetanic spasms and heavy breathings. |
| | Repose (time not noted). |
| 1 hour 2 „ | Death. |

On examining the various parts of this animal, strychnine was distinctly observed in (1) the contents of the stomach, (2) contents of the intestines, (3) the blood, (4) the urine, and (5) lungs, liver, heart, spleen, and kidneys, and muscle together. The experiment afforded a second proof that anti-

mony does not render the detection of strychnine in the animal system more difficult. Indeed, from the more distinct indications of strychnine obtained from every part of the WHITE DOG and BLACK DOG, as contrasted with the HORSE and LARGE POLICE DOG, I am inclined to regard the previous administration of antimony as favorable to the chemical detection of strychnine after death. Although it would be injudicious to deduce a positive conclusion from a single experiment, yet I may be allowed to draw attention to the influence which the conicine appeared to exercise over the action of strychnine. The WHITE DOG received less than a grain of strychnine, and was seized with tetanus in eighteen minutes from the commencement of the experiment, and died in twenty minutes after the tetanic symptoms manifested themselves; whilst the BLACK DOG, which had partaken of fully a grain and a half of strychnine, along with extract of hemlock, was not seized with tetanus till thirty-three minutes after the administration of the first dose, and survived the appearance of the spasms for twenty-nine minutes. In other words, the WHITE DOG had passed through the severest stages, and had fallen into the period of repose, before the BLACK DOG, with more strychnine to act upon its system, showed the slightest uneasy feeling. Moreover, after the spasms did come on, they were at no time so severe in the case of the BLACK DOG as those occurring in the WHITE DOG.

An experiment was likewise performed for the purpose of determining how far morphia influenced strychnine-poisoning. For this purpose a healthy cat was treated as follows :

THE CAT.

0 minute. $\frac{1}{4}$ gr. strychnine and 1 gr. muriate of morphia.

38 minutes. ,, ,, ,,

On both occasions the powder was placed by force in the mouth of the cat, as the animal could not be induced to take it in food. Much frothy matter was expelled from the mouth, and some strychnine was doubtless lost in this way.

43 minutes. Tremors—tetanic spasms—claws repeatedly expanded and retracted.

46 ,, Laborious breathing—pupils much dilated.

50 ,, Head thrown back, causing the body to describe an arch—animal then thrown on its side—heavy breathing, accompanied by more or less violent spasms.

53 ,, Repose.

56 ,, Death.

In this instance I cannot say the spasms were in the slightest degree relieved by the morphia. Their occurrence appeared to be delayed for a short time, but when tetanus did come on, the spasms were no less violent than when strychnine was administered alone.

Chemical analysis showed strychnine to be present in (1) the contents of the stomach, (2) contents of the duodenum, (3) muscle, (4) liver, spleen, lungs, heart, and kidneys, (5) blood, and (6) urine.

Granting then that strychnine can be discovered throughout the system of an animal poisoned by it, the question comes to be, will not time, with its host of putrefying agents, rub out all trace of the poison? On this point I have some experiments to adduce. The HORSE, previously referred to, after being buried for four weeks, was again exhumed, and the remaining portions of the lungs, liver, and heart, with a considerable portion of muscle and intestine, were taken out and submitted to analysis. Strychnine was present in (1) the intestines, (2) muscle, and (3) the lungs, liver, and heart. Other portions of the HORSE, which had lain above ground for three weeks

and which were in an advanced stage of decomposition, were likewise tested. These parts were (1) the contents of the stomach, (2) the muscle, and (3) the blood, and strychnine was detected in all. Even the stomach itself, which had been exposed above ground for three weeks and a half, on being washed free from a portion of the contents which were still adhering to its inner coat, chopped up, and analysed, yielded distinct evidence of strychnine. Again, as farther proof of the possibility of detecting strychnine some time after death, I have to bring forward some observations made upon a DUCK, which was poisoned by strychnine on the same day as the HORSE. The following are the doses given, and the symptoms exhibited by—

THE DUCK.

0 minute.	3 grs. strychnine in mash.
15 minutes.	Fluttering of wings—Spasms more or less violent, intermitted with periods of repose—at times the bird was so rigid that it could be lifted up by the foot and held straight out.
2 hours.	$\frac{1}{2}$ gr. strychnine placed on tongue—successive and intermitted periods of tetanus and repose.
3 „ 30 „	Death.

The dose of strychnine given to the DUCK was undoubtedly out of proportion, but it was administered for the purpose of more speedily killing it. The bird was partly dissected two days after its death, and was laid aside for three weeks and a half. By that time it was much decomposed, and maggots were crawling abundantly over and through it. The maggots, it must be particularly observed, were *living* maggots, not *dead* ones! On examination, strychnine was detected in (1) the gizzard and contents, (2) the intestines and contents, and (3) the muscle, with the lungs, liver, heart, &c.

These later experiments demonstrate that strychnine can be discovered in the animal system after a reasonable time has been allowed to pass. It is quite possible, and I believe it probable, that, by-and-by, when the animal matter in which the strychnine is lodged is itself decomposed, that the strychnine atoms will likewise resolve themselves into more simple compounds, and the time come when strychnine can be no longer recognised or even traced. It has lately been advanced, that strychnine is so stable and indestructible a substance, that it ought to be recognised in the *débris* arising from the decomposition of the animal killed by it; but such appears to me highly improbable. It is doubtless true, that concentrated sulphuric acid may be heated over strychnine without decomposing the alkaloid, and the tests for strychnine may be as readily observed after the heating with sulphuric acid as before. Considering the readiness with which sulphuric acid decomposes most organic bodies, this non-action on strychnine must be considered a very severe test, and one which says much in favour of the stability of strychnine. But it is not a conclusive experiment as regards the influence which the natural putrefactive powers may, and can exert on one organic substance in presence of a second organic body, which is itself undergoing active decomposition. There are changes proceeding every day in the putrefaction and decay of vegetable and animal matter which the chemist cannot explain, and which, as yet, he has failed to follow in his laboratory, with the aid of his glass jars, acids, and alkalies. This remark applies with still greater force to the action of a living plant or animal on material brought within their reach. We cannot prejudice the processes of organic life from experiments upon dead and inorganic substances. There

are combinations and decompositions going on during the life of plants and animals, which we cannot repeat or copy. Why the tiniest plant, the most minute lichen, moss, seaweed, or fungus; the pigmy insect whose life and generation is compassed by a single day, as well as the microscopic animalcule, compound matter, and change its state and form, in a manner which defies our steam-engines and steam-hammers to accomplish; and which all the resources of heat and light and electricity, directed and backed by the ingenuity and intellect of man, have failed even to approach.

—*Pharmaceutical Journal.*

(*To be continued.*)

STABLE MANAGEMENT

WHAT a mass of consequences is comprehended in that short sentence, "Stable Management!" What a host of ruined constitutions and crippled limbs has it not to account for! What new diseases introduced, and what old ones perpetuated, by stable management—verily, we should write it rather *mis*-management! for how in fortune's name the absence of everything that could tend to an animal's comfort, and the presence of everything that could tend to the contrary, came to be dignified with the title, we profess ourselves somewhat at a loss to understand. "Stable management!" Shades of departed steeds, from the time that man placed the iron in your mouths, and claimed by might the right to make you slaves, we can fancy the concentrated irony of your version of stable management; we can fancy the "high-mettled racer" telling of his aching limbs and cracked sinews, his heart-sickness from the perpetual hot-air bath in which he spent his best days: we can hear the hack tell of his bad provender, his eyes smarting from the accumulated pungent gases of his badly ventilated home; while the cart-horse is sullenly groaning his disapprobation of the chaff on which he often tries to live and do his duty. What a history we should get of "stable management" if its victims could state their grievances!

But we are forgetting that our intention is to be practical, and not speculative; let us come to plain statements and answer the question. What is the object of any system of stable management? We imagine, to keep the animals in the best health and working condition on the most economical plan. How are we to do it? According to all that has been said and written on the matter, we may select from twenty systems for the purpose, each one claiming to be the best. Now we are not going to talk any nonsense about keeping the animals in a condition as nearly as may be to a state of nature;

on the face of it, working horses are not in a natural condition ; it is not natural to live in stables, to draw loads, or have iron rings nailed on to their feet. What the horse is in his native wilds, wherever they may be, and what he is under domestication, are two very different things ; his habits are totally changed, and his functions materially modified. We do not wish to exclude the aids of scientific reasoning on what an animal was evidently intended for by nature, but we do wish to state our conviction that, under totally unnatural circumstances, the question of what is best to do or be done is one to be answered by actual experience, experience founded on correct knowledge of principles : the most philosophically correct statement may become the most arrant rubbish when some of its premises are altered.

To begin at the fountain head,—a word about breeding. We are not about to tell the farmer how long he may work his mare in foal, or what sort of horse is adapted for his country, because we have an idea that farmers are in a great measure like other people ; they fancy they know their own business best, and, providing they find a certain system answer their purpose, they are not fond of trying experiments ; “and small blame to them for that same.” But we must take the liberty of asking some of them why they do not act up to what they know to be correct ? They have an idea, we fancy, of the meaning of hereditary transmission of disease ; on what principle, then, is the groggy, or broken-winded, or the blind old mare, when no longer of service, kept on just to “get” a foal or two out of her ? Do they fancy they are proceeding the right way to continue a healthy stock, or do they make their colts for the same purpose that a certain honest tradesman made his razors—to sell ?

Before we can hope to ensure a healthy condition of our studs, we must have a healthy constitution to start with, and healthy colts are only a very common sense consequence of healthy parents ; give us fair play, then,—in other words, give us some healthy material, and we will endeavour to tell you how to keep it so. First, as to the stable in which our animals for agricultural purposes are to reside. Of course most of those for whom we write have their stables built ; to those who have not we offer a few concise directions : and those who have may modify their establishments accordingly, that is, provided they think it worth the trouble.

1. Keep as far away from a northern or eastern aspect as possible : south before all, and west next.
2. Swear by loose boxes, and don't believe in stalls.

3. Have the floors of brick, nearly level, slightly tending to the drain in the *centre* of the box.

4. Have plenty of light, and have the windows so arranged that you can regulate the quantity as you please.

5. Ventilate! on scientific principles if you can—but ventilate! Have openings above for the foul air to escape, and some below for the pure air to enter. Very little ingenuity is required to arrange some simple contrivance for directing the lower current so as not to strike on the animals' legs.

6. Make each box as high and long and wide as your ground will permit; we don't prescribe any particular number of feet; in reason, you cannot have too much room, and you must have enough to permit the horse to turn easily in all directions.

7. Patronise iron mangers, water troughs, and racks, and let every box have one of each, taking the liberty to put the rack quite low, that the horse may eat his hay in the way he prefers, with his head down; if you will put the fodder nearly out of his reach, he will occasionally show his contempt of your ignorance by pulling it to the ground before he eats it, employing it then in about equal proportions as food and litter. So much for the mere receptacle; now for the thing to be received.

At what age may the cart-colt be taken from the paddock and straw yard, for the purpose of being stabled and worked? We assume that the animal has been well kept, that he has had plenty of good grass in the field, and good hay in the yard. If you wish to be economical, and starve your horses, wait until they have done growing; it does not pay before that time. We assume also that the young animal has been handled about the head and legs frequently, and accustomed to the sound of clanking iron; otherwise his first visit to the forge will perhaps leave an impression of so disagreeable a character as to render him totally unmanageable for a long time afterwards on each recurring visit. These preliminaries being settled, we answer our question of "what age?" by saying three years at least, and we don't intend to abate one single week. If we could trust you, or rather your servants, we would let you have the two-year-old for some very light work; but we cannot make you understand that the light work of an adult horse is abject slavery to so young a one, and having been more than once deceived we cannot run the risk again. At three years old, then, take your colt, and have him shod for the first time. Ah! this first shoeing!

what a point from which radiate contracted hoofs, corns, navicular disease, and all the ills that feet are heirs to : how we could wish to become a subtle spirit in the brain of every smith about to apply the first shoes, how soon we would dispel the notion that a colt's foot is a very unsightly piece of mechanism that requires to be rasped and cut into proper form. Save us—proper form ! How we would in the gentlest manner insinuate to him the propriety of shutting up his knife in the cupboard for that time, or, at the most, using the back of it to scrape away any broken horn, and not cut and leave open those tubes which will pour out their liquid contents, and forthwith become hard and brittle. Then, becoming more subdued as we found our suggestions attended to, we should in the most matter-of-fact way ask him to make a shoe to fit the foot, and not the foot to fit the shoe ; we should pray him to protect the sole by a broad cover, to leave the heels of the shoe thinner than any other part, and, lastly, to put two nails in the inside quarter, and four on the outside ; having so done, we should quit our temporary habitation, with the pleasing conviction that for once in his life at least a horse had been properly shod by our instrumentality.

We have our animal in action now, condition good, worked at first moderately, and located in an appropriate stable, well lighted, drained, and ventilated ; we will treat him as a working horse, and inquire how and when we shall feed and tend him.

The quantity of food and frequency of administration must of course altogether depend upon the amount of work the horse is called upon to perform ; the quality also, and character of the provender will be modified by the same circumstance ; the really hard-worked animal, the fly-horse during the London season, can and does take his eight or ten feeds per day, sometimes of pure unmixed oats, no time being allowed him for the consumption of more bulky and less nutritious material ; the draught horse, at the time he is but little required, will keep up his condition even without oats at all, providing he has meanwhile a plentiful supply of good hay. We are acquainted, indeed, with establishments where the work is irregular, though sometimes severe, the horses being entirely fed on bran, but the result appears to be anything but satisfactory : a rough coat, soft muscle, and excessive perspiration under exertion, show the system to be ill sustained by such aliment, independently of the disposition such animals have to skin diseases of various types, especially surfeit.

We are justified, then, in holding as an axiom that for the working horse, oats are an indispensable requisite for the

maintenance of robust health. It is a question with many as to whether oats should be crushed or not under all circumstances ; some contending for the universal application of the system, while others would limit it to the old horse, on the plea that young horses contract a habit of gross feeding on discovering that their provender does not require so much mastication ; for our own part, we confess to a leaning to the side of crushed oats generally employed ; perfect mastication may be ensured by combining a little bran and a double or treble portion of chaff ; and certainly the superior facilities for digestion, and the consequent relief of the digestive organs, are points worth attending to.

As to green food and roots, they stand rather in the position of alterative medicines, very valuable in moderate quantities, but by no means adapted for supporting the nutritive functions of a working animal. Another important consideration is the amount of water to be allowed. Wherever it is possible we advocate the trough system ; the vessels being kept filled, and the fluid being always the temperature of the stable. If an animal come in too warm he may be kept from it for a short time, or only permitted a small quantity, but usually he may be left to himself with perfect safety ; experience having taught him that his supply will not be taken away, he usually manifests no eagerness to consume a large quantity at a draught. If, however, troughs are not conveniently applicable, care should certainly be taken not to allow the animals hot from work to walk into the pond and fill his stomach with an immense quantity of cold fluid ; the caution would seem almost unnecessary, were it not that cases of colic are the constant consequences of its neglect.

We have not, in the course of our observations, entered into the minute details of the several phases of stable economy, remembering that our readers, or at least those who will take any interest in the subject, are practically acquainted with them, and would not be likely to alter their times of feeding or quantities of food at our suggestion.

We have simply ventured to string together a few notions that struck us as being somewhat cast on one side in ordinary practice. "A word to the wise is enough." Another time, possibly, we may catch a few ideas floating in our minds relative to the Hack and Hunter. If we should be so fortunate, we promise to fix them, for our readers' amusement at least, if not instruction.—*Oxford Journal*.

THE VETERINARIAN, NOVEMBER 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

OPENING OF THE SCHOLASTIC SESSION 1856-7, AT THE
ROYAL VETERINARY COLLEGE.

THE Lectures were commenced, for the Session, at the above institution, on Monday, October 13th, by Professor Simonds, giving the introductory address.

It may, perhaps, be thought by some persons, that we have no right to offer any observations on the above subject, especially as one of us took an active part therein. But in the editorial *we* there is that which enables us to ensconce ourselves as behind a shield, and thus protected, we think we may venture to break through any false feelings, usually designated "delicate" ones, and speak independently, as we have been wont to do; but we will be brief, lest we should be accused of self-laudation or praise-seeking.

As in antecedent years, for we can now remember a goodly number, we were not forgotten by our friends,—the older members of the profession. Indeed more than usual were present on this occasion. Their presence is always extremely gratifying, not only as proving the estimation in which they continue to hold their *alma mater*, but rather because it acts as an incentive for good to the student, by awakening a spirit of industry and emulation. The aspiring mind will naturally say, "There is Mr. So-and-so, he has by perseverance, suavity of manners, and the exercise of his talents, raised himself to the position in which he stands. Why cannot I do the same? Henceforth I am resolved, at least, to try." A noble resolution, and one which if honestly carried out, will be sure to be crowned with success. And besides this, the teachers, too, are both pleased and encouraged. May it

be long ere any cause shall arise for the discontinuance of this time-honoured custom !

It awakened serious reflection to hear one present say, "On the morrow is the jubilee of my having obtained the diploma of this institution. Fifty years have rolled away into the ocean of the past, since little more than a youth I sat in this theatre, one of a class of eight or nine, and now I see it filled to overflowing with pupils and their friends." Right honorably has he comported himself throughout life, and richly does he merit all that he has obtained, as well as the high estimation in which he is held, not only by his professional brethren, but by all with whom he has had intercourse. Another had been a pupil of Mons. Vial de Sainbel, being one of the six young men placed on the foundation of the establishment. He remembered the first operation the first professor of the then infant institution performed,—the removal of supernumerary fetlocks from a horse,—and admirably he said the professor did it. Since then, he had been actively employed in his profession both at home and abroad, and had he hoped been instrumental in doing some good for it. He now justly holds a high and important office in it.

We could look back for more than thirty years, and felt that to be a long period of our existence, which we fear has been somewhat unprofitably spent ; but what is that compared to theirs ? Many changes and improvements, too, we have known take place. We have witnessed the three lectures in a week increased to as many, and sometimes more being given in a day. We have seen the objectionable, although to a certain extent advantageous, system of pupils being allowed to go to the medical schools for instruction, give place to all, or nearly so, that is required by the student, being taught within the walls of the college ; while the number of pupils has increased very considerably. Surely all this indicates that we are increasing in reputation, if we are not progressing so rapidly as some might wish, and think we ought to. "Let patience have her perfect work ;" all will yet be well, if the profession be only true to itself.

We have no desire to offer any comment on the opening address, this we are contented to leave to others ; nevertheless, we may be permitted to say, that the subject-matter thereof—the correlation of those sciences that appertain to the study of Veterinary Medicine—is one of paramount interest. Like the links of a chain, each reciprocates the support it receives from the other, and thus increased strength and usefulness is given to the whole. For although some persons may ignorantly affect to condemn science, averring that it is but of little use in practice ; we, on the other hand, believe, and therefore maintain, that it is essential to the continuance in well-being and well-doing of our profession, for without it we should soon be like a ship at sea, without a rudder or a compass. Slowly have we become convinced of this, and tardily indeed have certain divisions of science been admitted as parts of our curriculum ; still do we hail what has taken place as being indicative of our onward progress, and confidently hope for its increase.

One point to which the lecturer adverted appears to us of very considerable importance, not only to the profession, but to the community at large. We may be permitted to put it in the form of a question : Do artificial manures, which have become so numerous of late, and are so generally employed, cause vegetables—either by inducing in them a luxuriant state of growth, or impregnating them with that which is in some measure foreign to them—to become productive of diseases in animals ? If so, the inquiry that necessarily follows is :—Is not the evil thus brought about more than commensurate with the supposed good that has been obtained by their use ? Surely it were better that this forcing system, for the sake of gain, should be done away with, rather than that the health of our animals should be perilled. Causes, both predisposing and exciting, to disease we know have always existed, they are the sad consequences of the “ fall ;” but whether this be one or the other, we have not yet, perhaps, sufficient data to enable us to decide. At any rate the question is a suggestive one, and our readers may possibly be able to throw some light upon it.

OUR PROFESSIONAL FRIENDS IN THE ARMY.

It is a subject often pressed upon us—the little done for the profession by those who would really appear to have the greatest amount of leisure. At once the conviction will arise in the mind that those referred to are our brethren in the army, both in Her Majesty's and the Honorable East India Company's service; before whom a splendid field lies open, and especially to the latter.

It is our gratification to know that from among the members of the profession, in both of these departments, we can select a goodly number of friends, a few of whom have, since we undertook the editorship of this Journal, given us abundant proofs of their sincerity and kindness. But where are the many? We could remind some of as yet unfulfilled promises, but there is plenty of time for them to make ample amends, and we will wait patiently.

In the present number we are glad to perceive an addition is made to the list by a communication from Mr. J. W. Jeffery, V. S. 4th Bengal Cavalry, in which he says, "You must be well aware that veterinary surgeons in India know much more about the *Cannabis Indicus*, and also many other drugs that are not used in Europe, than can be known at home respecting them." This position we are quite ready and willing to concede, and do hope that our professional brethren will, from time to time, forward to us the discoveries they have made by experiments, or the knowledge they have acquired from having been placed in another sphere for the employment of their talents, coupled with that which may have been obtained by them from the practice of those whom they have supplanted, namely, the native horse-doctors; by whom agents were doubtlessly used of which they were previously ignorant, and from the introduction of some of which into our *materia medica*, it is possible that our power over diseases might be increased, and our usefulness correspondingly extended. Will a few more of our friends, out of the many, take this "gentle hint?"

We are contented to become their debtors for the profession's sake.

In reference to the *Cannabis Indicus*, we have by us a small quantity, which is much at the service of our friends at home who may be desirous of giving to it a trial. All we ask in return is an account of the result.

POISONING BY STRYCHNINE.

WE have inserted in the present and last numbers of our *Journal*, lengthened extracts from two important lectures on strychnine, by Dr. Macadam. We cannot but think that he has almost, if not completely, exhausted the subject of poisoning with this agent, so varied and extensive have been his experiments, so clear and decided the results. We would that here the matter should end, for we cannot refrain from reiterating our condemnation of cruelly experimenting on the lower animals, and envy not the feelings of those who can have recourse to a repetition of them. We have seen so much of the torturing pangs produced by strychnine on different animals, that we would not on any account again administer that agent as a poison, or give it in such doses as to produce its full effects on the organism. Yet there may be, sometimes, valid reasons assigned why these experiments are instituted; and we think the late awful murders by means of this drug have in a degree sanctioned much that has been done, but not all. How many tyros in science have stepped forth, and heedlessly and needlessly experimented on some poor unoffending brute, with the vague hope of making a discovery by which he would obtain an ephemeral fame, or perhaps, in his own estimation, become immortalised! On the Continent we know these things are done with impunity, and we have expressed our regret that it should be so. We also remember hearing the late Sir Astley Cooper say, that his friend Professor Coleman, when writing his work on 'Suspended Animation,' had destroyed cats and dogs enough to choke up Fleet-ditch, which once ran by the side of the

Veterinary College; and hetacombs of poor animals, we doubt not, have been offered at the shrine of science, without any corresponding good resulting to mankind from the sacrifice. All this has only tended to strengthen our objections, since we do not believe man has any right whatever thus to misuse God's creatures; they were made for man's use, but not for his abuse. How common is it for the experimental physiologist, being ignorant of the function of some organ, to extirpate it; and because the poor animal has afterwards eked out a miserable existence, or perhaps grown fat, from being well fed and confined, the experimenter has sagely come to the conclusion that the organ could be done without! As if the creature was wiser than the Creator; the thing formed than He that formed it.

Again and again we have been solicited to lend our aid in these experiments, but we have firmly refused it. With what others have done we have been more than content, believing, as we have before said, that as the lower animals were made for the use of man, so, when a definite object is in view, and one which could not otherwise be attained, we have a right to make use of them; but even then not to put them to unnecessary pain, far less torture, their feelings being as exquisite as our own; the information however being once acquired, we are not justified in going any further, by repeating again and again the same experiments, for the satisfaction either of ourselves or a class of students, since this would amount to an abuse and a cruelty.

We believe that the greatest benefit which has of late resulted is the certain detection of this peculiar alkaloid (strychnine) after death, so that it will be less likely hereafter to be resorted to as a poisoning agent than formerly. This is well for the ends of justice. In the pointed language of Dr. Macadam, in his "suggestion" to the poisoner, "were he, as knave chemist," he says, "asked with what substance he (the poisoner) could most surely get rid of his victim, and at the same time escape the hands of justice, he would say to him, 'Take this poison, or that, or the other; but, as you value your life, my good fellow, don't you try strychnine.'"

VETERINARY MEDICAL ASSOCIATION.

SECRETARY'S REPORT FOR THE TWENTIETH SESSION,
1855-56.

MR. PRESIDENT AND GENTLEMEN,—In accordance with my duty at this, the last meeting for the session, I bring before you an outline of our proceedings.

In the first place allow me to congratulate you on the continued success and increased popularity of the association. Since the commencement of the session considerable accession of members has taken place, and we have never lacked subjects for discussion at our weekly meetings. These meetings, too, have been always well attended, and the matter brought forward for consideration of a highly useful and interesting character. The debates that followed have been likewise carried on in a friendly spirit, each member giving his views on the question and his practical experience with readiness and urbanity, from which I am confident we all have obtained that degree and kind of knowledge which, but for the existence of this institution, we should have been without. The library having been considerably increased by donations and purchase, its books have been in frequent requisition by the students, an advantage we can only derive from this association. The funds, by the report of the treasurer at the beginning, were in a very favorable state, which must have now become much increased. All this speaks well for the progressive improvement of the institution.

At the first meeting the following were elected from among the students as vice-presidents—Messrs. Crowhurst, Hall, Hill, Hern, Lowe, and White. At the Christmas examination three of these, Messrs. Hall, Lowe, and Hern, having obtained their diplomas, Messrs. Shipley, Martin, and Adamson were elected in their stead.

The following essays have been read and discussed :

The Prize Essay, by Mr. G. Western.

On Diseases of the Foot of the Horse, by Mr. J. Adamson.

On Diarrhœa and Dysentery in Cattle and Sheep, by Mr. J. B. Hall.

On Glanders and Farcy, by Mr. C. Stephenson.

On Spasmodic and Flatulent Colic, by Mr. W. C. Branford.

On Parturient Apoplexy, by Mr. T. Hill.

On Pleuro-pneumonia, by Mr. W. Shipley.

On Bursattee, by Mr. F. G. C. Shaw.

Anatomy of the Air Passages, and on Broken Wind and Roaring, by Mr. J. B. White.

On Tetanus, by Mr. J. B. Martin.

The Physiology of the Blood and Hæmo-albuminaria, by Mr. W. H. Crowhurst.

The CASES related have been—

Stomach Staggers, an Epizootic in France during 1854, by Mr. J. Gamgee, M.R.C.V.S.

A Case of Ascites in a Cow, by Mr. W. H. Crowhurst.

Also, of Severe Lacerated Wound, by the same.

Instance of Peculiar Chronic Lameness in a Cart-horse, by Mr. J. B. White.

Paralysis affecting Five Horses, by Mr. W. Shipley.

Case of Heart and Lung Disease, by Mr. T. Fletcher.

And one on Uterine Dropsy in a Bitch, and Suspected Poisoning with Calomel, by Mr. C. Lowe, M.R.C.V.S.

The MORBID SPECIMENS received, with their history, were—

Ruptured Ilium, sent by Mr. C. Marson, M.R.C.V.S.

Abscess in the Guttural Pouch, by E. J. King, M.R.C.V.S.

Cancer affecting some of the Nerves, with their Ganglia, by Mr. H. Flower.

Ulceration of the Os Pedis, by Mr. T. Wattam.

And now, in closing this brief report, allow me to thank you for the honour you conferred upon me in electing me as your acting secretary. My desire has ever been to give faithful and impartial accounts of our periodical meetings, and I sincerely hope that they have given you satisfaction. Heartily do I acknowledge the courtesy and leniency I have always received at your hands, and, in the language of my predecessor, venture to express my sincere wish that our successors may take part in the discussions hereafter with as much pleasure and profit as we have done, assured of this, that if they do, they cannot fail to acquire that knowledge which will be of infinite service to them in after life.

CLEMENT STEPHENSON.

MEETING OF THE COUNCIL OF THE VETERINARY MEDICAL ASSOCIATION,

HELD AT THE COLLEGE, OCTOBER 10, 1856.

PRESENT:—PROFESSOR SPOONER, President, in the Chair.

Professors Simonds and Morton, and Messrs. Broad and Batt.

The Minutes of the last Council Meeting having been read and confirmed, the accounts were audited and found correct.

The essays introduced during the past session having been examined, to Messrs. Branford, Shaw, Crowhurst, White, Hall, and Hill, the "Thanks" of the association were unanimously awarded for their respective papers. To Mr. J. Field, was also unanimously awarded the *Silver Medal*, for his essay 'On the Action and Comparative Therapeutic Value of Purgatives to the Horse.'

Resolved,—

That the anatomical dissection for the students for the coming session be,—An injected preparation of the arteries and veins of the head, neck, and chest of the sheep.

Resolved,—

That the subject of the Prize Essay be,—The Anatomy and Physiology of the various Joints of the Body, in accordance with their received Classification.

Addition was directed to be made to the books of the library by purchase, and others to be bound; and the rules &c., of the association, with the catalogue of books, to be printed.

Two of the vice-presidents, chosen from among the veterinary surgeons, having retired according to law, Messrs. H. Stevens and J. Woodger were elected in their place.

Thanks being presented to the Chairman and Honorary Secretary, the meeting broke up.

W. J. T. MORTON, *Hon. Sec.*

MISCELLANEA.

STAGE COACH TRAVELLING IN THE LAST CENTURY.

JANUARY 3d, 1725, King George I. landed at Rye, in Sussex, on his way to London, from one of his visits to his Hanoverian dominions. He was impatient to return to St. James's; but six days had to pass before he was enabled to reach London. There had been a heavy fall of snow. The road from Rye being mostly raised between ditches was barely visible, and it was not till the 7th that the snow had been sufficiently cleared to make his Majesty's passage safe. King George I. was two days on the road from Rye to London. From London to Rye is now an easy stage in three hours, winter or summer.

We also read that, in the year 1672, when throughout the kingdom only six stage coaches were constantly going, a pamphlet was written by one John Cresset, of the Charterhouse, for their suppression, and among the several grave

reasons given against their continuance are the following:—
 “Stage coaches make gentlemen come to London upon every small occasion, which otherwise they would not do but upon urgent necessity. Nay, the conveniency of the passage makes their wives come up too, who, rather than come such a long journey on horseback, would stay at home. Here, when they come to town, they must presently be in the mode, get fine clothes, go to plays and treats, and, by these means, get such a habit of idleness and love of pleasure that they are uneasy ever after.”

SORCERY IN FRANCE,

THE peasantry of Touraine believe firmly in sorcery, and a number of designing knaves turn their credulity to good account by pretending to be magicians. In the hope of enlightening the peasantry, the Tribunal of Correctional Police of Tours has within the last two years condemned not fewer than six *soi-disant* sorcerers to fine and imprisonment as swindlers; but the faith of the people in their power still continues undiminished. Two days ago two other such practitioners, named Lafont and Belluot, were brought to trial before the same tribunal for swindling. A peasant named Jahan, of Cussay, said that he had had recourse to their art to cure an ox of his which was ill, and to make one of his cows give milk; and that what they did was this—stalked solemnly round the stable in which the animals were, scattered about a white powder, burned a blue powder, spread out twelve pieces of five francs given by him on an open book containing pictures, and muttered some unintelligible words, plucked a few hairs from the neck of the ox, and washed the udders of the cow; and, lastly, made him burn nine wax candles, and have a certain number of masses said. For all these important operations they had charged 73f. Another peasant of the same village, named Jourdain, said that he also had had recourse to their skill for a sick ox, but had only paid them 40f. Another man named Pinard, member of the municipal council of Balermes, further proved that he had paid them 20f. to be told, by their art, what had become of a sum of money which he had lost. The Tribunal sentenced Lafont, who was the chief actor in these affairs, to a year's imprisonment, and Bolluot, who had acted as his assistant, to a month of the same punishment.

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Communications and Cases.

STRANGULATION OF THE INTESTINES.

By R. H. N. HOLLOWAY, M.R.C.V.S., 2d Madras L. C.

ALTHOUGH the symptoms of both strangulation of the intestines and of abdominal tympany are, perhaps, sufficiently well known, and easily recognised by the members of the veterinary profession, there are many unprofessional readers of your Journal who may not be conversant with the leading features of either of these affections. I therefore trust that the following details may not be without some interest, at least to the latter-named persons, and more especially as I believe that no cases of the kind have recently appeared in the *Veterinarian*.

The symptoms in the instances which I am about to cite, as well as the post-mortem appearances, were carefully registered by me, in my case-book, on the spot at the time.

STRANGULATION OF THE ILEUM.

A cavalry troop-horse was admitted into the sick lines at three p.m. on the 20th of March last, with symptoms, as I was informed, indicative of spasmodic colic. I found him tottering about the stall, and maintaining with considerable difficulty a standing position. The pulse, at the sub-maxillary artery, was very irregular and oppressed; the mouth cold; buccal membrane very pallid and the tongue of a bluish hue. The whole body was also bedewed with a cold perspiration. He looked frequently to his off side, dropped suddenly, and then rose again several times in succession. When down, he stretched out his fore-legs

alternately, and thus partly raised himself, so as to press his abdomen against the ground. Once he fell as though shot, but instantly rose again. There were remissions from pain and sometimes for as much as a quarter of an hour at a time, but at others for a very few minutes only. The horse neighed frequently and loud, and he appeared likewise to be suffering from intense thirst.

With the existence of such alarming symptoms as these, I could scarcely entertain a hope of alleviating, much less of successfully combating, the disease. Venesection, however, was attempted, but after the extraction of five pounds of dark coloured venous blood, the animal staggered so much that I deemed it expedient to arrest the bleeding.

I should certainly have given immediate trial to a copious enema of tobacco-smoke, for I have found this, in urgent cases, to be invaluable; but, unfortunately, there was no "Reid's Patent Enema Syringe," or other suitable instrument at the time in store.

On the following morning, I was surprised to find my patient still alive. He was, however, pulseless at the jaw, but the heart was beating violently, and in number from 90 to 100 in a minute. His head, neck, and extremities were deathly cold. The original diagnosis, that strangulation of the intestines existed, was fully confirmed in my mind, and I expressed my opinion accordingly.

The horse was frequently attacked with rigors; and finding that the bladder was full, a flexible catheter was employed to draw off its contents, when about three pints of healthy looking urine was extracted. When the instrument was first passed into the bladder, he ejected, with a spasmodic action, a small quantity of a highly offensive, and greenish coloured fluid, through both nostrils.

Almost immediately after the withdrawal of the catheter, he again laid down, resting on his near side. He continually looked round, also, at his side. His flanks heaved, and his eyes betokened a kind of hopeless resignation.

He remained down the greater part of the morning, when he afterwards rose, and at 2 p.m., just twenty-three hours after his admission, he fell down and died almost without a struggle.

The post-mortem examination, discovered a complete strangulation of two portions of the Ileum, by a peritoneal band, which passed partly across the small lobe of the liver. About three yards and a half of this intestine, extending towards the cæcum, were in a black and gangrenous state from the strangulation.

TYMPANY OF THE STOMACH AND INTESTINES.

By the Same.

A white mare, regimental No. 2004, of the 1st troop, was admitted into hospital on the morning of the 23d of June last, with symptoms of abdominal pain. I was made acquainted with the circumstance about half-past ten a.m.; and, although, I attended immediately, so sudden and sharp was the attack, that I had only arrived a very few minutes before she died.

I was informed that the mare was unable to stand, after her admission, and that she had been sitting upon her haunches. She was now lying stretched out on her side, bathed in a most profuse, but cold, perspiration, foaming at the mouth, and making constant, but ineffectual, efforts to eructate. Her eyes were fixed, and nearly closed; she had no pulse, her abdomen was remarkably tympanitic, and she was straining violently. A little blood was issuing from the rectum, and the gut was slightly protruding and much congested. She struggled a few times, groaned, and then expired.

Autopsy.—Immediately the abdominal cavity was laid open the intestines burst forth with irresistible violence; both the stomach and intestines throughout being enormously distended with flatus.

There was but little ingesta in the viscera, and this was frothy from the admixture of gas. The contents of the *stomach* were very sour, and there were a number of very minute thread-like worms in its interior. An inflammatory blush also pervaded its villous coat. About a pint of fluid was discovered in the pleural sacs, and both the lungs and the pleura pulmonalis, showed the existence of acute inflammatory action.

VALVULAR DISEASE OF THE HEART ASSOCIATED WITH GASTRITIS.

By C. T. SHORTEN, M.R.C.V.S., Ipswich.

I READILY embrace an opportunity just afforded me of sending you a portion of the heart of a mare in which the tricuspid valve is in a state of disease, and which I am inclined to think is somewhat unusual; at least I have only met

with a similar state of the valves once before. The bicuspid valve was likewise diseased, but not to the same extent. The semilunar valves on either side of the heart were thickened, and the corpuscula Arantii enlarged. There were several ecchymosed spots within the ventricles, and also great vascularity both of the peri- and endocardium. From eight to ten ounces of fluid had likewise become effused into the pericardial sac. One of the chiefly interesting facts, if not the most interesting, connected with this case, is the circumstance that disease of the heart was not suspected during life; for my attendance was requested in consequence of the animal being attacked with gastric irritation.

The patient was a Suffolk cart-mare, in regular work, and when left on the night of the 22d instant, with the other horses, was supposed to be in perfect health. On the following morning she refused her food, and appeared to be in pain, and when made to move she did so with a stiffness of gait, particularly of the hind extremities. At the time I saw her, which was at 9:30, she was being led slowly about. She was evidently disinclined to walk, and was in a considerable sweat. As soon as she was set at liberty she laid down, turned her head towards her belly, but did not struggle. Her pulse was full but soft, and numbered between 70 and 80 beats per minute; the countenance was particularly anxious. The breathing was hurried and short, and the tongue and mouth very fetid. As I expected, treatment proved of no avail, the patient dying about 3 o'clock on the morning of the 24th.

Post-mortem.—On laying open the abdomen, a perfectly healthy appearance of the peritoneum was presented, and not the slightest blush of redness could be seen on any part of the membrane, even when the viscera were turned aside. Indeed, it was not until the interior of the stomach was examined that a cause for most of the symptoms was to be found. This viscus contained a fair quantity of food in an undigested state. On its removal, the villous coat was found to be intensely inflamed. The depth of the redness varied in different parts, and gradually changed to a dirty brown colour towards the pylorus; beyond which no inflammation existed.

This is the only instance of gastritis unassociated with enteritis that I have seen. The viscera of the thorax were also healthy with the exception of the heart.

[The disease affecting the valves of the heart essentially consisted of a deposition of fibrine, both beneath and upon

the serous membrane. The deposit had evidently existed for some time, and was consequently much condensed; but no trace of osseous tissue could be detected within it. The general condition of the organ, together with the effusion into the pericardial sac, clearly demonstrates that a mechanical impediment to the free passage of the blood was in operation; and although valvular disease was not suspected during life, we cannot doubt that a peculiarity both in the pulsatory action and sound of the heart would have been noticed at the time of the animal's illness, and even antecedent thereto, had the general symptoms indicated an affection of the organ sufficient to lead to its special examination.

RUPTURE OF THE STOMACH OF A HORSE.

By F. B. TAYLOR, V.S., Denbigh.

ON the 2d of October, at 8 p.m., I was called to attend an aged carriage-horse, the property of a gentleman in this town, which was said to be suffering from colic. The animal on the previous day had had a "constitution ball" given him, although he was in good health and had done his work well.

I found my patient lying, but without manifesting much pain, except that occasionally he would turn his head to the near flank. I merely ordered that he should be kept quiet for the present, and stated that I would see him again in about an hour. On my second visit, he appeared to be in the same condition, the pulse was natural, and the extremities warm, and I was informed that he had got up several times during my absence.

At about 11 o'clock I was again summoned in haste, the messenger stating that the horse had become very much worse. I found him now suffering acutely with abdominal pain, the pulse and breathing were much accelerated; violent tremors, accompanied with occasional spasmodic twitching of the muscles, were likewise present. No tympany had ever existed, and the horse showed no unwillingness to move. The body soon became bedewed with perspiration to such an extent that it trickled down his legs. A sedative draught, with which was combined a little *ol. tereb.*, was administered; friction was also applied to the abdomen; and enemas frequently thrown up, but these were returned almost immediately. In a short period the animal appeared to be relieved, and stood up quietly for nearly an hour, except that at times he

would elevate the off fore leg. His body then became very cold, and the pulse scarcely perceptible to the feel. Frequent attempts to micturate were also now made. Good hand-rubbing was had recourse to, and the legs were enveloped in flannel bandages, but without much return of the natural warmth. The abdominal pain again suddenly returned, accompanied with a considerable increase of the salivary secretions, which literally flowed from the mouth. There were, however, no attempts at vomitation. On turning him round to give another sedative draught, he staggered and suddenly fell forwards, and became violently convulsed. Presently he rose again, when we returned him to his stall. In a few minutes he fell down again, groaning piteously; convulsions succeeded, and death shortly closed the scene, he surviving the attack only about six hours.

On the following day, I made a post-mortem examination. The abdomen contained a small quantity of gas, and on the exposed surface of the intestines was found a quantity of semi-digested food, which had escaped from a rupture of the stomach. The rent was fully twelve inches in length. A small portion of properly softened food still remained in the stomach. There was no appearance of ulceration or other change of structure in the coats of the stomach to be detected, nor any other abnormal condition of the intestinal canal, except a slight constriction of the duodenum a few inches in length. Every portion of the remaining viscera were healthy. The heart was very large, but free from disease.

Remarks.—It would be important to ascertain in this case when the rupture of the stomach took place, and what was its immediate cause. That its coats had given way before the draught was exhibited seems to be proved by the circumstance that the animal's sufferings were much aggravated shortly afterwards, and which probably depended on some of the mixture passing through the laceration upon the surface of the intestines. Had it any connection with the ball first producing spasm?

TETANUS SUCCESSFULLY TREATED.

By ISAAC SEAMAN, V.S., Saffron Walden.

A BAY harness-mare, aged seven, belonging to the Rev. Lord C. Hervey, was received into my infirmary, at 3 p.m., September 19th, 1856, in consequence of being taken suddenly

ill when near my residence. About a fortnight previously she had fallen, and received a slight injury upon the off elbow and stifle joints, which had been treated by his lordship's groom. Being from home at the time the mare was admitted, Mr. Edward Eldrid, who was then my assistant, gave

Aloës B. B., ʒv, et Hyd. Chlor. ʒj,

in a ball; the jaws not being then closed to an extent sufficient to prevent its being given by the hand. I saw the patient at 6 p.m. There was now evidence of extreme nervous excitement, accompanied with that peculiar expression of countenance which marks the existence of tetanic disease. The ears were immovably erect, and the eyes were frequently retracted within their orbits, forcing the membrana nictitans over their fronts; nostrils dilated; breathing much quickened; head and neck extended; the muscles of which, with those of the quarters and abdomen, were very tense. The latter named were also extremely sensitive to the touch, and the lower part of the abdomen seemed to be the seat of pain, as indicated by the animal frequently lifting the hind feet towards it. Pulse 40, and slightly increased in volume. The mare showed a willingness to drink, but the attempt to swallow produced violent spasms of the muscles of the throat.

℞ Pot. Sulph., ʒvj;
Pulv. Opii,
Pulv. Verat. Alb., āā ʒj. Ft. bolus.

The jaws being too close to admit the hand, the medicine was passed into the mouth on the end of a stick.

20th.—8 a.m. Patient extremely irritable, the least noise or the entrance of a person into her box produced great excitement. The pulse was unaltered, but all the other symptoms were greatly aggravated. No fæces or urine had passed.

℞ Aloës B. B. ʒiij;
Pulv. Opii, et
Ol. Tiglii, gr. x Ft. bolus.

3 p.m. No fæces having been voided, frequent injections of oatmeal gruel were used. The Vinegar of Cantharides conjoined with mustard, was applied to the sides of the neck, and Verat. Alb. ʒiv., exhibited in a ball. Four hours after the administration of the hellebore, a profuse perspiration came on, accompanied by fits of apparent choking, and

violent spasms of the muscles of the chest, neck, and throat. The pulse rose to 55, but at the same time it diminished in volume. These symptoms lasted for about four hours, during which there were griping pains present; the abdomen also was frequently struck by the hind feet, and the mare rolled and beat herself against the sides of her box with violence. 8 p.m. The intensity of the symptoms having subsided, there was left great exhaustion of the physical powers. Some fæces were now passed, which were very hard, and as black as charcoal. 10 p.m. The nostrils are still greatly dilated, and the breathing is also very quick; but the patient does not seem so excitable as she did before the hellebore was given.

21st.—8 a.m. The mare is more tranquil; the affected muscles are less tense, and the tenderness of the lower part of the abdomen has subsided. The pulse is 40, and a disposition to take food is evinced. She drank a pail of water, and ate a small piece of hay, which was swallowed without producing spasms of the muscles of the throat. Fæces and urine are still scanty.

R Aloës B. B., ʒiij;
Pulv. Opii, ʒj;
Nit. Pot., ʒiv. Ft. bolus.

Continue the injections of oatmeal gruel. 6 p.m. The expulsion of both fæces and urine during the afternoon have been plentiful.

22d.—8 a.m. There is a marked improvement. The muscular tension is greatly diminished, and the countenance is less anxious. A noise, or the approach of a person does not produce fright. The fæces are liquid, but there is no appetite. Give

Ammon. Sesquicarb., ʒiv;
Hyoseyami Ext., ʒj.

and let plenty of hay-tea be placed within her reach. 8 p.m. She has drank freely of the hay-tea during the day.

23d.—8 a.m. Improvement continues; a moderate quantity of bran, hay, and oats, had been eaten during the night. The fæces are more solid.

24th.—8 a.m. No fæces were passed during the night, and the nervousness has somewhat increased, but the appetite is good. Ordered hay-tea, bran, and oats.

25th.—Fæces and urine still scanty; the nervous excitement about the same as yesterday. Gave

Veratrum Album., ʒiij;

three hours after the administration of which the usual

symptoms of the drug were apparent: viz., spasm of the muscles of the throat, neck, chest, and abdomen; mouth suffused with frothy saliva; evacuation of pultaceous fæces; profuse perspiration, and the pulse increased in number, but diminished in volume.

26th.—Excitement continued; fæces scanty; appetite good.

℞ Aloës B. B., ʒij;
Pulv. Opii, ʒss;
Pulv. Camph., ʒij. Ft. bolus.

Apply Acetum Canth. to the sides of the cervical spine.

27th.—Much improvement. Ordered hay-tea, bran, and oats, with which is to be mixed a little sulphur and nitre daily.

28th.—Considerable improvement. Nervousness has almost disappeared; the jaws are much relaxed, and the action of the bowels is regular. Give moderate exercise. The mare, on being taken from her box, became extremely excited; the tail was erected; the membrana nictitans passed entirely over the front of the eyes; the nostrils were dilated, and the breathing was much increased. Her movement also was very stiff, and effected with a straddling gait. On returning to her stable, she soon became quiet, and commenced feeding.

October 2d.—Having so considerably improved since last date to this day, the patient was now discharged.

4th.—On my calling to see the mare, the groom informed me that she had accomplished her journey home, a distance of five miles, very well. She is fast recovering.

November 4th.—To-day I was passing through Chesterford, the residence of Lord Hervey, and saw the mare, carrying her groom at a galloping pace, and with an activity equal to that she had before illness. Four days ago, and just six weeks from the time of the attack, the mare resumed her usual harness work. No medicines were given, nor external applications used, after October 1st.

RUPTURE OF THE STOMACH OF A WEANLING-COLT ABOUT SIX MONTHS OLD.

By W. TAYLOR, V.S., Ardwick, Manchester.

ON Sept. 29th, my attendance was requested by Mr. Cookson, farmer, Didsbury, near this city, to see a weanling-

colt, which was ill. Upon examination I found the colt to be suffering from indigestion. The leading symptoms were a distended belly ; discharge of saliva from the mouth ; respiration a little increased and the pulse numbering about 40 per minute. I prescribed—

Tinct. Opii, ℥j ;
Spt. Eth. Nit., ℥ij ;
Ol. Lini, ℥vj. In draught.

Diet to consist of boiled linseed, combined with bran mashes. On the following day the mixture was repeated.

Oct. 1st.—I again visited the patient, which I found to be so much better that no medicine was administered, but instructions were given for the same diet to be continued. On the next day a messenger was sent to request my immediate attendance, as the colt was much worse. I learned by my inquiries that the animal was very restless, that the belly was much swollen, and the penis pendulous. Upon my arrival the colt was dead, from which I felt satisfied, though the subject was so young, that some organ was ruptured.

Post-mortem Examination.—On first laying open the abdomen, I observed a large quantity of masticated grass, mixed with bran, &c., in the cavity, and proceeding further in the examination, the stomach was found to be ruptured. The length of the rent was about ten inches. The whole of the other organs were in a healthy condition. It is well known that in young animals the tissues are exceedingly soft and yielding, which makes this case, the subject not having reached the sixth month of his age, the more interesting.

QUERY.—Is the rupture to be referred to an accumulation of sulphuretted hydrogen gas within the stomach, with spasm of its cardiac and pyloric orifices, or to an extraordinary action of the muscular coat of the organ on the food within ?

CÆSARIAN OPERATION ON A SOW.

By GEORGE MORGAN, V.S., Aloah, Banffshire.

ON the 12th July, 1856, my attendance was requested to a sow, the property of F. Runcie, Esq., Greenlaw. On arriving, I found a case of difficult parturition, and though the labour pains had existed for several hours, she had only

been delivered of two pigs, and these had to be removed with assistance. The sow was a small one, and very fat, and apparently a cross of the Chinese breed.

On examining the animal per vaginam I found the head of a pig, firmly fixed in the pelvis, which, by the aid of a hook, inserted in the nose, I was able to extract. The sow was then left for some time, when she commenced straining again. After sufficient delay I made a re-examination, and found I could just touch the nose of another pig with the tips of my fingers. Two hours afterwards, finding no progress was made, and that the animal was evidently sinking, being unable to bring the abdominal muscles into play, I resolved on the performance of the Cæsarian operation, as the only means of saving her. After taking all the necessary precautions, I made an incision into the right flank, about a couple of inches, in front of the antero-superior process of the ilium. On dividing the peritoneum, I drew up the uterus, and making an incision of six inches long into the right cornu, I introduced my hand, and extracted the pig. I was somewhat surprised to find that this was the only one in the uterus. Subsequently to removing the fœtal membranes, and reducing the hæmorrhage from the parts by the use of cold water, I brought the edges of the wound in the uterus together, and secured them by simple suture. The organ was then returned to its place, and I next secured the external wound by similar sutures. The patient was then allowed to rise.

The next day, as there was a loathing of food, and a suspended action of the bowels, I administered the following:—

P. Semina Crotoni, ʒss ;
P. Nit. Potassæ, ʒiij. M.

in a quart of oatmeal gruel.

Two days afterwards the bowels were still constipated, and a grumous discharge came from the uterus. The side operated on was also somewhat inflamed and swollen, and the sow still refused her food.

I repeated the medicine, and ordered fomentations to the side and belly. The following day the bowels were open, and the animal began to feed, and in a short time was quite well.

After suckling the pigs, the sow was put up to fatten, it not being considered advisable to allow her a second access to the male. As I had expressed a wish to see her when slaughtered, word was sent me on the 11th of Sept., exactly two months after the operation, that she was to be killed on that day.

I attended, and found that the external wound was completely and perfectly closed. Adhesion had, however, taken place between that part of the uterus in which the incision was made, and a portion of the contiguous intestine. Suppuration had begun here, and a small abscess had consequently formed, from which I could trace a sinus leading towards the intestine. I have little doubt, that had the animal been allowed to live, the matter would have discharged itself through the bowels. The right ovary was destroyed.

THE EDINBURGH VETERINARY COLLEGE.

To the Editors of the 'Veterinarian.'

GENTLEMEN,—For a long time I have observed with regret, a feeling anything but friendly towards the Edinburgh Veterinary College and its graduates; and I, having apparently the *misfortune* to be of the latter class, most assuredly feel aggrieved by the manner in which we are spoken of in what ought to be the bond of union between all veterinary surgeons in this country—"the *Veterinarian*."

I do not wish for a moment to show how much we are wronged, but would merely confine myself to the "why and the wherefore such things should be."

I need not go any further back than your last October number—the first put into my hands since my return from the Crimea—for proof of this uncalled for and unwarranted animosity; for certainly, in my opinion and in that of others also, it merits no other appellation.

It has been long known amongst us, that the title of "Royal" has been, and is now, denied to our college by our London brethren: indeed, many of them go so far as to assert that we have no college, are not veterinary surgeons, and are unqualified to practise as such, in fact, that we are no better than quacks.

All these things we pass over in silence as unworthy of notice, except the first—the *royalty* of the affair.

In an article on the adulteration of food and drugs, *Veterinarian*, page 599, inserted between brackets is the wish expressed, "that none but those who had graduated as M.R.C.V.S. should be allowed to assume the name of veterinary surgeon." Now as affairs at present stand, we may entertain a shrewd guess as to whom this is mainly meant to

apply, and did we act in the same spirit of retaliation, then should we, most undoubtedly, be departing from that honorable position which we, as professional men, are bound to uphold and respect.

I should not now have requested your kind permission to insert this letter, were I not aware that very many worthy men who graduate from the London Veterinary College leave that edifice with a well-marked antipathy to their fellow graduates of Edinburgh, but from what cause I am unable to comprehend. It seems strange that two practitioners, bearing the warrants of two separate colleges, and having the same object in view, and who, by receiving their diplomas, are in a manner vowed to support and advance their profession, no sooner meet on the world's highway than he, whose diploma boasts not of royalty, is looked down upon as inferior, no matter what his abilities are; no matter what his education may have cost him; all goes for nothing in the estimation of the party from the royal college, though *he* may be anything but what he ought to be.

We must look to other causes than to healthy business competition for a solution of this problem; and amongst the foremost we somehow or other look to the periods between entering on college studies and quitting them. What though a rival spirit should at present exist between our two colleges? —is the profession therefore to suffer in its onward progress and in the estimation of the public, who by-the-bye, cannot always perceive the preponderating qualities of the *diplomas*? Surely not! and I hope the day is not far distant when the amount of money paid for a diploma will be not a *fancied* guarantee as to the superior qualifications of the owner.

“*The Cheap Certificate of Professor Dick's Scotch School*” may become as potent in the hands of a man who has the interests of his calling at heart, as that of any other veterinary college in Europe. People generally prize that most which they have been at most pains to acquire, and if a diploma is easily gained it is often as lightly valued. My diploma, qualifying me as a member of the Edinburgh Veterinary College, was only earned by a careful and arduous course of study, and that after having served a longer apprenticeship than many do in both their studies. It bears the names of men as examiners, than whom none are superior in their several departments of science in this country; and as to my teachers their equals for persevering industry and careful inculcation of solid principles into the minds of students are seldom to be met with; and when I see and hear of students being rejected at the tribunal which I have passed, gaining a diploma,

said to be as superior to mine as the diamond is to impure charcoal,—with *éclat* too—and that with scarcely an hour's intervening study, then I am sure people will not think me vain of my diploma,—believing no other proof necessary of my right to style myself veterinary surgeon, and jealous if any one should think I have not justly earned it. I am scarcely inclined to credit the assertion made by the Secretary of the Royal College of Veterinary Surgeons, *Veterinarian*, page 618, when he says that, “every year several of the pupils of the Scotch school were at the expense and labour of obtaining the diploma of the college after having received Professor Dick's certificate.” To my certain knowledge the money is paid, but as to the “labour,” that is never thought of; indeed, before I left the Edinburgh college the *move* had become well known, and the most careless student was always consoled with the thought, when he looked forward to a rigorous examination, that if he failed at that college he was sure of passing at the other, in a few days after, by paying his money.

I remember the time, whilst residing in Scotland, of subscriptions being got up, expenses incurred and paid, and labours cheerfully entered upon by members of the Edinburgh Veterinary College, to assist in obtaining a charter; and how have they been repaid for their services? Why, in the manner I have described; and in the council of the Royal College of Veterinary Surgeons, not a word is heard of these men, for with the exception of two or three gentlemen, all the members of that body are selfishly envious of the reputation of a class of men, who, though silent, are nevertheless watchful, and may yet put to the blush those who seem their persecutors.

People who speak so enthusiastically of the advancement of veterinary science, and give such sage advice—to be *up and doing*, only mock themselves when, immediately afterwards, they are found undermining that science by attempting to blast one of its strongholds, and sweeping off in cutting sarcasm its supporters and defenders.

I know many of your readers will be somewhat astonished at my boldness, in thus contributing to the *time-honoured* pages of the *Veterinarian*, for the first time, but I think the subject, if properly viewed by an impartial looker on, will be found no trivial one; if it is only considered what an amount of harm is done to the profession by the total exclusion, nay, worse, the desire to put out of the lists altogether,—because they believe one well earned diploma sufficient,—of a class of practitioners not a whit inferior to any others, as widely

diffused, and as willing and ready to labour and toil, until the goal of perfection dawns upon our adopted life-task, and as ready to share their triumphs as any other, though more ostentatious body.

I have had somewhat striking proofs of how matters stand within the last twelve months, and bitterly must every true lover of advancement deplore the blindness and paltry pique which leads to such grave results.

I speak not from hearsay, but from what I have seen and also read of in your journal.

I may be in error, if so, the greater part of my fellow graduates are in the same dilemma, and I can assure you, they would most willingly be put right on the even path, for the present one is, to all appearance, mighty desolate.

In the meantime, I only wish to show those who, perhaps, without care for the consequences, strew pebbles behind them because the route they now choose appears easy to traverse; but as an old proverb is very useful, and seldom out of place, we shall say, "that people who live in glass houses, should never be the first to throw stones."

I should feel much obliged by your insertion of this letter, which I hope is not of too great length, for as I think the subject is deserving of notice, and likely *to do good*, no pains ought to be spared to achieve that end.

Yours most truly,

GEORGE FLEMING,

Veterinary Surgeon,
Military Train.

COMMENTS ON MR. HORSBURGH'S CASE OF CHRONIC NASAL GLEET, PRODUCED BY A DISEASED TOOTH.

By G. HAUSTON, V.S., Preston Ford, Dalkeith.

GENTLEMEN,—Having been a reader of your valuable Journal for the last eleven years, I, in looking over the August number for this year, observed that Mr. Horsburgh, Veterinary Surgeon, Dalkeith, had therein related a case of chronic nasal gleet produced by a diseased tooth, which he had cured by an operation. My object in addressing you is to show that the circumstances connected with this case are not precisely the same as described, and therefore I have to request that

you will give insertion to this communication in your next number.

Mr. Horsburgh states that I had attended the mare for eighteen months previously, whereas the fact is that Mr. Herdman, farmer, South Side, brought this mare four years since to me for my examination, at which time I told him she had the strangles. The case had been neglected, for nothing had been done to the mare with a view of effecting a cure for the four months. On examination, I found that a discharge came from both nostrils, and that the submaxillary and parotid glands were both enlarged. This discharge had an offensive smell, and a soft place on the nasal bones could be detected. I had the mare cast, and carefully examined her teeth, and found them all sound. As I had never seen a case of the kind before, I proposed to the owner to have the opinion of Professor Dick, and the mare was consequently taken to Edinburgh two days afterwards, when she was examined, and operated upon by the late Mr. Barlow. Neither Professor Dick nor Mr. Barlow found anything wrong with her teeth.

Mr. Horsburgh states that he removed a diseased tooth, which of course I do not dispute; but would observe that, in all probability, this tooth had become diseased in the interval which elapsed between the time of my examination and the period of her being placed under the care of Mr. Horsburgh.

I saw this mare ten days ago, and am enabled to state that she is not even now any better, and for a proof of this I beg to call your attention to the annexed note, which I have received from Mr. Herdman.

* * * * *

October 20, 1856.

SOUTHSIDE; October 13, 1856.

DEAR SIR,—I have received yours of this date, respecting my mare. I am sorry to say that, after all that had been done, she was still discharging from the nostril when I parted with her. I sold her last Giffard Fair, to Mr. James Downer, Musselburgh, where I think she can now be seen.

I am, yours, &c.,

THOMAS HERDMAN.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 663.)

SIMULTANEOUS EPIZOOTIC AND EPIDEMIC ATTACKS.—Patté has spoken of diphtheritis occurring in man, in various degrees of intensity, in the spring of 1855, and at the same time several veterinary surgeons had occasion to observe the same form of angina in the horse. It would appear, however, from the brief description of the cases occurring in the latter animal, that they partook of the nature of strangles, inasmuch as abscesses formed in the intermaxillary space and parotid region. Reynal observed, at the same time, several instances of croup in fowls.

CROUP IN CALVES.—Knielrisch observed a case of croup in a steer nine months old. As there was imminent danger of suffocation, tracheotomy was performed, and a mass of purulent mucus, tolerably firm, about the thickness of a finger, and five inches long, passed out, and had the appearance of having filled a bronchial ramification. As soon as this croupose exudation had been expelled, all sort of asphyxia disappeared, and the animal was instantaneously restored to health.

As a singular occurrence, Gros-Claude relates a case of angina membranacea (pseudo-membranous croup), in a nine-year-old ox; the disease has hitherto only been described as occurring in young animals. The false membranes in question occur in the intestines as well as in the air-passages. Sticker has seen cylindrical masses of semi-organized lymph, measuring from ten to fourteen feet in length; and another German veterinary surgeon, Prehr, has seen portions, from three to four feet in length, pass out with the dung.

On a recent visit in Aberdeenshire, I was several times consulted about laryngitis in calves, which not uncommonly ends in death, and the mucous membrane of the air-passage is then found covered with semi-organized lymph. I saw two of these cases, like croup of infants, and the dyspnœa was very marked. The act of breathing was audible at a long

distance. These might justly be called cases of *stridulous laryngitis*, or *catarrhal croup*. The cough was not so marked as the sonorous respiration, and the appetite of the animals was at first almost undisturbed. I am not aware that croup has been unusually prevalent in Aberdeenshire of late, but I trust to collect further information on the subject.

INOCULATION OF THE TYPHOID EXUDATION OF MAN IN ANIMALS.—Dr. Bourguignon, believing that inoculation may be a preventive of typhoid fever, introduced some of the matter into the systems of a horse and a dog. The material was obtained from the intestinal ulcers, and from the diseased mesenteric glands. It induced ulcers, circumscribed by a painful œdematous swelling, which cicatrized very slowly. The matter from the mesenteric glands had a worse character than the other.

It would be of considerable importance to decide whether the typhoid exudation was inoculable from man to animals. Is there any typhoid fever in the horse? The Germans have spoken of it, and named it typhus. This is not surprising, when the typhoid or enteric fever of man is by many of them considered a true form of typhus. It is stated, that in the Vienna school, during the last quarter of 1854, twenty-four horses, affected with typhus, were admitted; of these, six died, three were killed, six recovered, and ten remained under treatment. In one case of very speedy death, the post-mortem lesions were much like those of anthraxal fever, but in other instances typhoid exudations and scabs existed in the stomach and intestines, also in the nasal cavities, acute swellings of the spleen were met with, and infiltration and hæmorrhages beneath the skin.

We require more extensive and accurate data to judge of the value of these statements from the Vienna school. The ulcers of Peyer's glands, and indeed all the lesions of typhoid diseases, occur in the cattle plague, known as the contagious typhus. There have been cases observed of ulcers of Peyer's patches, perforation of the intestine, and death in the horse. It remains to be learned how frequently this disease, unquestionably typhoid, is met with. French and German veterinarians have described, under the head abdominal typhus, the epizootic staggers; the prostration, and nervous symptoms being looked upon as characteristic of genuine typhus, but I have no hesitation in saying, from personal observation, that this is a mistake.

I feel certain, that both typhus and typhoid maladies affect animals in Great Britain, but they are mistaken for other

diseases, and one in particular, "Purpura hæmorrhagica." No misappropriated name ever led to so much error and confusion as this one. That *rare* and *benignant* disease of man, justly termed "purpura," is *rare* and *benignant* in the horse. The cases looked upon as purpura are often, I am certain, typhus, or very closely allied to it.

INTERMITTENT FEVER IN HORSES AND CATTLE.—This disease has been so rarely witnessed in animals that its existence has been denied by some authors; others have described, under this head, very different diseases or affections, having only some characters in common with true intermittent fever. Professor Joseph Lessona, of the Turin school, was, for many years, attached to a large breeding establishment in Sardinia, and in a long memoir on marsh emanations, he speaks of the frequency of intermittent fever in cattle, horses, and even sporting dogs, not only in Sardinia but in Turin and the Roman marshes. Lessona says that it is only through inattention that it has not been observed in cattle. He has had occasion to show it to his colleagues and students, presenting a quotidian or quartan type. The treatment consisted in cinchona bark, and quinine.—*Turin Veterinary Journal*, p. 291, 1854.

Lehwer, speaks of a case of intermittent in the horse. For eight days consecutively the horse had attacks of shivering, followed by heat, and this associated with depression and disturbed appetite. During the attack, the pulse was small and rapid, the respiration short, the spine stiff, the region of the spleen sensitive and expanded; after the shivering had lasted about a quarter-of-an-hour the heat set in. Besides a small bloodletting, Lehwer prescribed potassio-tartrate of antimony in decoction of chamomile; the next attack was weaker, and then all symptoms subsided, and the animal recovered.—*Supplement to the Magazin für die ges. Thierheilkunde* for 1855.

Genuine intermittent undoubtedly occurs in animals, and I have good reason to believe that it is to be observed in the jungles in India. So far as Europe is concerned, and Great Britain in particular, the evidence of its existence has not been clear till recently. Ruini speaks of it, but he is not a great authority on pathological questions. Lanini alludes to it as associated with similar organic lesions; viz., enlarged spleen in man as in animals. Cleghorn speaks of hypertrophied spleen the result of ague, as very frequent amongst the sheep in the Island of Minorca. Royston alludes to intermittent affections in the horse in the marshy districts

of Cambridge, in 1807: it presented the tertian type. Few cases have been seen in cattle; more in the dog. Spinola speaks of having seen three, two in horses, and one in the dog. Hertwig has written an elaborate memoir on the disease in the dog. We would gladly hear something of the jungle-fever in the horse in India.

(To be continued.)

Facts and Observations.

THE NATIONAL VACCINE BOARD.

THE report of the National Vaccine Board shows that, in the course of the past year, 220,639 charges of the lymph have been sent out. The employment of the lymph in the various military depots and hospitals at Scutari, and in the Baltic and Black Sea fleets, is stated to have effectually protected our forces against the spread and ravages of the smallpox. 128,495 vaccinations are reported, of which 8637 were performed by the stationary vaccinators of the board in the metropolis.

THE MILKING PROPERTIES OF THE CHAROLLAIS CATTLE.

M. Lefebvre de St. Marie, Inspector-General of Agriculture of France, has called our attention to a passage in our report of the meeting of the Royal Agricultural Society at Chelmsford, published in the August number of the *Veterinarian*, from which it is to be inferred that the Charollais cattle are good milking animals. Upon this supposition we have remarked that "a cross between them and our short-horns would prove advantageous." M. St. Marie says that valuable as this breed is for the butcher, and likewise for the plough, it cannot be commended for its large supply of milk. Indeed, as a distinct breed, the Charollais cows yield a very small quantity of milk.

POISONOUS GOATS' MILK.

ON the 13th of Oct. about twenty persons residing in Strada St. Ursula and Strada Stretta, Malta, were seized with violent vomiting, and other symptoms of cholera. It was, however, soon ascertained by the police physician, Dr. Felice Calleja, that their illness was caused by drinking the milk of two goats which had been fed on some wild herbs, commonly known in this island by the names of oxalis or haxixa at l'Inglisi, latiris, or tenghud, or gemmugha, our wood-sorrel. However, none of these cases proved fatal.—*Medical Times*.

FACT ABOUT WOORALI.

IN the *New York Medical Times* we find the following statement: "Dr. John W. Green, of New York, is now engaged with some distinguished physiologists in experiments upon animals with the Woorali poison by the endermic method. The peculiar effects induced seem to favour the opinion, that important results may be anticipated from the sedative action of this poison in cases of tetanus or rabies."

THE POISONOUS PROPERTIES OF THE NARCISSUS
POETICUS.

WE are again indebted to Mr. Mellett, M.R.C.V.S., Henley-on-Thames, for forwarding us the particulars of some cases of the poisoning of pigs by the bulbs of the white jonquil, which for a second time has occurred very recently in his practice. He says that, "on Sunday morning, October 12th, I was requested to examine some pigs, the property of J. W. Rhodes, Esq., Henerton House, in consequence of one having died the day before, and several more being now very ill. Two died while I was on the premises, which afforded me an opportunity of making a post-mortem examination before decomposition had commenced. On opening the stomach, the vessels of which were much congested, I recognised immediately the smell of the Narcissus root, and in searching among the contents several pieces of the bulbs of the plant were found. I ascertained that two days previously to the

death of the first pig, the animals had got into the garden and rooted up a large quantity of bulbous plants and among them many jonquils. The symptoms exhibited by the animals differed somewhat from those seen in the previous cases I have reported in your journal, which I attribute to the plants not being in leaf at the time they were eaten. The most marked symptoms were obstinate constipation of the bowels, associated with cerebral disturbance very analogous to apoplexy. By the free use of aperients, the remaining pigs were soon convalescent.

EXPORTATION OF HORSES AND CATTLE TO CHILI.

A FEW days since, eight brood-mares and a stallion, two short-horn bulls and a cow, a Hereford bull and heifer, in all fourteen animals, were shipped at Southampton by Mons. F. R. de la Trehonnais, for the Chilian government. The stallion and two of the mares were selected from His Royal Highness Prince Albert's well-known stock of Clydesdale horses at Windsor, and will, no doubt, extend to another and distant hemisphere the well-deserved fame they have gained in this country. These animals were put on board the French clipper "Costa Rica," at Havre, which sailed on the day following under the most favorable circumstances of wind and weather that could be desired. We hope that the safe arrival of this first exportation to Chili will open to English breeders a new and profitable market, which, together with Australia and North America, may prove a powerful inducement to our agriculturists to turn their attention with renewed energy and judgment to the breeding of these fine races of horses and cattle, the boast and honour of English agriculture.—*Mark Lane Express.*

PROHIBITION OF THE IMPORTATION OF CATTLE INTO NORWAY.

THE government of Norway has interdicted for a time the importation of English and Scotch cattle into that country, in consequence of the continuance of the disease pleuropneumonia among our herds. We do not imagine that the interests of English agriculturists will be seriously affected by this measure, nor do we think that the cattle of Norway will be thereby secured against the malady, because this

affection, whether contagious or not, doubtless belongs to the class of epizootic diseases, and as such its introduction into any country does not entirely depend on the importation of diseased animals.

UNIVERSAL EXHIBITION OF HORSES.

THE French government has just decided that prizes shall be offered for the competition of horses of all countries at the great French Agricultural Exhibition of next year. It will be remembered that Mr. Evelyn Denison, M.P., the President of the Royal Agricultural Society, in his report on the exhibition of 1855, and likewise in his speech at the Chelmsford meeting, expressed his regret at the absence of so interesting a department of the show as that of agricultural horses. This decision of the French government, and the other new features intended to be added to next year's meeting in Paris, will materially tend to render that great gathering even more numerous and magnificent than its predecessors.

Extracts from British and Foreign Journals.

HEREDITARY INFLUENCE, ANIMAL AND HUMAN.

(Continued from p. 670.)

THIS is the conclusion inevitable on a wide survey of the facts. It is equally inevitable *à priori*, if we take our stand upon the evidence of embryology; and as some readers prefer logical deductions to any massive accumulation of facts, we will ask them to consider the question from this point of view. Reproduction, in the vegetable and animal kingdoms, is known to naturalists under three forms. In the first, a single cell spontaneously divides itself into two cells. Here it is quite clear that the child reproduces the totality of the parent. In the second form, the process called "budding" takes place: the child here grows out of the substance of the parent, until its development is completed, and then it separates itself from the parent to live a free life. Here also the parent is reproduced in its totality. In the third form, a higher complexity of organization has led to a

more complex and more special mode of reproduction: the parent gives off from its own substance, by what may be also considered a "budding process," a mass of cells, which as pollen and ovule, as sperm-cells and germ-cells, unite to develop into plants or animals. Here again, there ought to be no doubt that the parents are reproduced; their offspring truly may be called "their own flesh and blood." Nor would the doubt have ever arisen, had not the great complexity of the organisms admitted the intervention of the Law of Variations, to which all dissemblances are due. But however such interventions may baffle our inquiries, the mind recognises at once the truth of the proposition that sperm-cell and germ-cell are as much to be regarded in the light of reproductions of the parents, as the cells produced by spontaneous division are to be regarded in the light of repetitions of the parent-cell.

And here we may glance at an ingenious hypothesis which would explain the fact of all our organs being double, by the concurrence of both parents: so that the father will give one half, the mother the other half, the father the right, the mother the left side:* "Cette idée ferait présumer que notre corps est double, et que nous sommes composés de deux corps finis artistement adossés l'un à l'autre." The fact that all our organs are double—some primitively, others permanently—was first demonstrated by Serres, who, in his very remarkable work on transcendental anatomy,† has given a rapid outline of this *Lex Serriana*, as Meckel calls it. In consequence of this primitive duality of all organs (the single organs being those in the median line, and formed by the fusion of two originally distinct organs), "l'embryon résulte de la réunion de deux moitiés d'embryon; l'animal unique, si l'on peut s'exprimer ainsi, est le produit de deux moitiés d'animaux." Serres would not, however, give any countenance, we imagine, to the hypothesis of each half being furnished by each parent; for the hypothesis is contradicted by the facts of the perfect resemblance as well as perfect symmetry of each side, whereas if one parent only gave one side, we should see realized in life the fantastic combinations sometimes seen at masquerades, presenting us with a figure, half of which wears the dress of a man, and half of a woman;

* Brouzet: 'Essais sur l'Education Médicinale des Enfants,' Paris, 1754. (Quoted by Lucas.)

† 'Précis d'Anatomie Transcendante,' Paris, 1842, p. 238. Dr. Lucas is in error when he attributes to Flourens the conception and demonstration of this important point. It is true Flourens himself claims it in his last work, 'Cours de Physiologie Comparée,' 1856.

or half of an Italian bandit, and the other half of a good peaceful shopkeeper.

It is now time that we should direct our attention to some of the perturbing causes which mask the laws of transmission from our perfect apprehension. While proclaiming as absolute the law of individual transmission, while proclaiming that the parents are always reproduced in the offspring, we are met by the obvious fact of the offspring often exhibiting so marked a departure from their parents, being so different in form and disposition, that the law seems at fault. For instance, Gall speaks of a breed of wolf-cubs taken from their mother and brought up together; one was as gentle as a dog, the others retained the savageness of their species. We may also point to the fact of a man of genius suddenly starting up in an ordinary family; or to a thousand illustrative examples in which the law of individual transmission seems at fault. To explain these would be to have mastered the whole mystery of heritage; all that we can do is to mention some of the known perturbing influences.

Sir Everard Home mentions a striking case, which has become celebrated, of a thorough-bred English mare, who, in the year 1816, had a mule by a quagga—the mule bearing the unmistakable quagga marks. In the years 1817, 1818, and 1823, this mare again foaled, and although she had not seen the quagga since 1816, her three foals were all marked with the curious quagga marks. Nor is this by any means an isolated case. Meckel observed similar results in the crossing of a wild boar with a domestic sow; in the first litter several had the brown bristles of the father; and in each of the sow's subsequent litters by domestic boars, some of the young ones were easily distinguished by their resemblance to the wild boar. Mr. Orton verified this fact in the cases of dogs, pigs, and poultry. Of the latter he says: "The so called silk fowls have certain marked peculiarities—a silky, or downy plumage, a black skin and face, black bill and mouth, black legs, and dark or even black bones; they have, moreover, a fully developed tuft on the head, five toes, and are feathered on the legs and feet." Peculiarities such as these were invaluable for the experiment. He found the produce of a silk cock with a common white hen to be "twelve or fifteen chickens, the whole of which had the black skin, black mouth, and five toes of the silk cock—his external development. As to their plumage, I could only judge in the case of four, the rest having died in the downy state. Of these four, then, they have all the black skin and

five toes of the silk cock, but, strange enough, while three of them have downy plumage, the other has feathers."

Besides this very remarkable perturbing influence we must also consider the phenomenon of *atavism*, or ancestral influence, in which the child manifests striking resemblance to the grandfather or grandmother, and not to the father or mother. The fact is familiar enough to dispense with our citing examples. How is it to be explained? It is to be explained on the supposition that the qualities were transmitted from the grandfather to the father, in whom they were *masked* by the presence of some antagonistic or controlling influence, and thence transmitted to the son, in whom, the antagonistic influence being withdrawn, they manifested themselves. As Longuet remarks, "S'il n'y a pas héritage des caractères paternels il y a donc au moins *aptitude* à en hériter, disposition à les reproduire, et toujours cette transmission de cette aptitude à de nouveaux descendants, chez lesquels ces mêmes caractères se manifesteront tôt ou tard."* Mr. Smith, let us say, has a remarkable aptitude for music; but the influence of Mrs. Smith is such that their children, inheriting her imperfect ear, manifest no musical talent whatever. These children, however, have inherited the disposition of their father in spite of its non-manifestation; and if, when they transmit what in them is latent, the influence of their wives is favorable, the grandchildren may turn out to be musically gifted. In the same way consumption or insanity seems to lie dormant for a generation, and in the next flashes out with the same fury as of old. Atavism is thus a phenomenon always to be borne in mind as one of the many complications of the complex problem. Very remarkable is the atavism exhibited by some of the lower animals, who bring forth young so utterly unlike themselves as to have been long mistaken for different species; while these young in their turn bring forth animals exactly like their ancestors. Here the children of one generation always resemble their grandfathers and grandmothers, and never their fathers and mothers.†

A third cause of complication is one which we propose to call "the potency of race or individual." Both father and mother transmit their organizations, but they do so in unequal degrees: the more potent predominates; just as if you mix brandy with equal amounts of water, soda water, and ginger beer, the taste of the brandy will predominate more

* 'Traité de Physiologie,' ii, 133.

† See Steenstrup on 'The Alternation of Generations;' and Owen on 'Parthenogenesis.'

in the water than in the soda water, more in the soda water than in the ginger beer.

According to Rush (quoted by Lucas), the Danes, intermarrying with women of the East, always produce children resembling the European type; but the converse does not hold good when Danish women intermarry with the men of the East. Klaproth observes the same in the mingling of the Caucasian and Mongolian races. Girou, after five-and-twenty years' experience in the breeding of sheep, found this "potency" destroy his calculations. He fancied that, by means of his Roussillon sheep and the Merino rams, he could sooner arrive at the fineness of wool which distinguishes the Merino, than if he coupled the Aveyron sheep with the Merino rams; but he found that the Roussillon type resisted the Merino so energetically that, after a quarter of a century of successive crossings, it still reappeared, whereas the Aveyron sheep had long ceased to be distinguishable from the Merinos. The same potency of particular species is noticeable in plants. Koelreuter is quoted by Burdach as having fecundated the *Nicotiana paniculata* with the pollen of *N. rustica*; and the hybrids thus produced were fecundated with the pollen of *N. paniculata*, but the plants resembled the *N. rustica*. On reversing this experiment, he still found the female *N. rustica* to have the preponderance; so that, cross the species how he would, the *N. rustica* showed most potency.

But although we thus see that race has a marked preponderance, we must also remember that it is subject to the individual variations of vigour, health, age, &c. Girou sums up his observations with this general remark: the offspring of an old male and a young female resembles the father less than the mother in proportion as the mother is more vigorous and the father more decrepit; the reverse is true of the offspring of an old female and a young male. In fact, if we consider that the offspring reproduces the organization of its parents, and, consequently, the organization of *that particular period*, we see at once that age, health, and general potency of organization, must be taken into the account of complicating causes. This also will help to explain—but not wholly explain—the great differences observable in the same family: differences of sex, of strength, and appearance. At present, however, science can only take note of it as a "perturbing influence."

Our survey of this great subject, brief though it has been, has enabled us to note four general facts, which sum up the

present state of knowledge, and which must be steadily borne in mind in all inquiries into Hereditary Influence :

1st. Heritage is constant: it is a law of organized beings that the organization of parents should be transmitted to their offspring.

2d. The offspring directly represents both parents, and indirectly it represents its ancestors.

3d. The offspring never represents its parents with absolute equality, although it represents them in every organ. Sometimes one parent predominates in one system, sometimes in another, sometimes in all.

4th. The causes of this predominance are various, some being connected with "potency" of race, or individual superiority in age, vigour, &c.; others being, in the present state of knowledge, not recognisable.

Leaving these facts without any hypothetical explanation for the present, let us pass on to a consideration of the meaning of the Law of Variation, which we have seen to be so perturbing an influence. Like produces like: that is the Law of Constancy. But we see it producing *unlike*, and the variation must have its cause. Development, whether taking place in a simple tissue or in the whole organism, must proximately arise from some alteration in the series of organic combinations. A cellular tissue would never develop into a nerve tissue, unless some new element were introduced into its composition. A whole dynasty of blockheads would never produce a man of genius by intermarriage with blockheads; the intermarriage must introduce "new blood." There is no chance in Nature. If two parents produce a child which is unlike them both, this child is not an accident: the unlikeness consists in the new combination of old elements. The cipher which stood before the numeral, thus, 01, has been transposed, and we have 10 as the result. Nature transposes in this way. Out of several elements of carbon, hydrogen, and oxygen, in the same proportions, she will arrange substances so various as starch, gum, and sugar. We need not be surprised, then, if, with elements so complex as those of an organism, a great variety of combination is produced; and, far from marvelling because children sometimes are unlike their parents, the marvel truly is that they are ever like them.

The old theories could make nothing of these variations; they quietly ignored them. The once dominant, and still famous, theory of the "pre-existence of germs," which lingers in the popular expression of the "oak being contained in the acorn," maintained that the embryo is the aui-

mal in miniature. The early microscopists observing the gradual appearance of the organs, jumped to the conclusion that the organs pre-existed in the ovum, and were gradually unfolded to view as they became larger. Indeed, when we see an egg by no means increased, either in size or weight, suddenly open, and a full-formed chick emerge, the idea that the chick was pre-existent in that liquid mass which once constituted the egg, seems plausible enough. Swammerdam and Malebranche pushed this notion to its logical conclusion, and declared that not only was the embryo a miniature of the adult, but the first created embryo of each species necessarily contained within itself all the germs of the future race; so that each generation included all subsequent generations. This is the famous *théorie de l'emboîtement*, which was advocated even by Cuvier. That Bonnet, Haller, and lesser men, should have been seduced by such a theory, is not remarkable when we consider the state of knowledge in their days; but after C. F. Wolff, Blumenbach, and Von Baer, had utterly refuted it, and replaced it by the sounder theory of epigenesis, to find Cuvier still giving it the sanction of his great name, is a point to be remembered in the history of opinion. At the present day, we believe no one of any authority maintains the theory of pre-existence. The microscope plainly shows us that, at first, the embryo is *not* like the adult animal in any respect; the resemblance grows as development goes on; the presence of one organ determines the presence of another; and, in the earlier stages, we cannot tell whether the embryo is that of a fish, a reptile, a bird, or a mammal, much less what *kind* of fish, reptile, bird, or mammal. It is the immortal honour of C. F. Wolff to have demonstrated the great law of epigenesis,* by which the parts of an animal are made one *after* another, and *out* of the other; so that each organ may be considered as a secreting organ with respect to the others. Treviranus subsequently adopted this idea of each organ having, as it were, a secretory function with respect to the others; and Mr. Paget has luminously expanded it in his masterly 'Lectures on Surgical Pathology.'

When it was believed that animals *pre-existed* in the germs of the original parents, the difficulty of accounting for variations, such as deformities and malformations, was either ignored, referred to "Satanic agency," or eluded by the

* 'Theoria Generationis.' 1759; and in a more popular version of the same work, 'Theorie von der Generation.' We have never seen the first-named work; the second we can commend to philosophic readers.

convenient supposition that deformed germs also pre-existed. Still there were troublesome facts not to be so got rid of. There were hybrids, for example. No one could say that there were pre-existent germs which were half horse and half donkey, or half wolf and half dog, or quarter wolf and three quarters dog.

We will not, however, linger over such hypotheses, anxious as we are to glance at matters of more practical interest; among them, the very important question of hereditary *insanity*. Every one is familiar with the fact of the transmission of this terrible malady, but not every one is aware of the extraordinary resemblance sometimes manifested in the nature of the attacks, and their periodical recurrence. Moreau relates the case of a man who, greatly agitated by the events of the French Revolution, shut himself up in one room from which he never stirred during ten years; his daughter, on reaching the age at which he was attacked, fell into the same state, and could not be made to quit her apartment. Esquirol tells of a lady who in her twenty-fifth year went out of her mind after her accouchement; her daughter was afflicted in the same way, at the same age, and under the same circumstances. We cannot here afford space for more illustrations;* the two just cited will suffice to indicate the tragic fact, that insanity is not only transmissible, but may suddenly manifest itself in persons who have hitherto shown no predisposition to it. The fact forces upon every mind an awful sense of responsibility, when a parent or guardian has to decide on permitting a marriage where the "hereditary taint" exists. It is a subject which has recently been handled in four fictions: in the 'House of Raby,' in Miss Jewsbury's 'Constance Herbert,' in Holme Lee's 'Gilbert Messenger,' and in Wilkie Collins's 'Moncktons of Wincot Abbey.' The three first named have used it not only as a tragic pivot, but as a moral lesson; and in so doing have taken the licence of fiction to promulgate very absolute moral views, upon which it is our duty to make some remarks.

These writers all assume that the transmission of the malady is inevitable, and hence they insist on the duty of renunciation. No one with the "hereditary taint" is justified in marrying. He must bear his burden; he must not compromise for selfish enjoyments the happiness of descendants. Were the problem really so simple as these

* Dr. Forbes Winslow might take up this topic in his valuable 'Journal of Psychological Medicine' with good effect.

writers make it, their moral conclusions would be indisputable. But artists are not bound to be physiologists, and are assuredly bad law-givers in such cases. As artists, they employ their permitted licence in simplifying the problem of insanity to suit their stories; but when they transcend the limits of art, and moralise on their selected cases, placing them before the world as typical, they commit a serious error, and they teach questionable doctrine, because they teach it by means of fallacious facts. Let us be understood. If it were absolutely *certain* that a man whose family had the "hereditary taint" could not escape the terrible inheritance, the moral rule would be clear, the verdict against his marrying would be absolute. But happily this is by no means the case. The Law of Variation here intervenes. Vulgar observation confirms science in declaring this inheritance of insanity to be very *uncertain*. "La transmission héréditaire," says Burdach, in summing up, "ne s'étend, la plupart du temps, qu'à quelques enfans." In many cases the malady is not transmitted at all. That is to say, it is so neutralised by the influence of the other parent as not to manifest itself. Out of three children two may inherit the malady—or only one—or none. Are all three children to be debarred from marriage on the chance that one or all may be affected? But the difficulty is further complicated. The three children, let us say, are perfectly healthy, passing into manhood and womanhood without once indicating any trace of the disease; suddenly, in mid-life, the disease breaks out,—for we are never certain of its non-appearance. Again, the three marry, have children, and die, without manifesting any of the fatal symptoms of the disease; yet their children may all be insane, because the law of *atavism* intervenes to frustrate calculations.

With such facts before us, consider the straits into which we are driven by the novelist's verdict. Three perfectly sane people are not to marry because there is a possibility of their one day becoming insane, or of their children inheriting the grandfather's malady. The same difficulty meets us in the case of *consumption* and *scrofula*, two diseases equally transmissible and almost as terrible. Are all the families in whom the consumptive "taint" exists to be excluded from marriage? To say so would be to make marriage a rarity, since few indeed among English families could be found, in which no consumption has appeared during two generations. Such difficulties the novelist eludes. Yet in real life these difficulties must be met. For our own parts, while fully sensible of the responsibility, we frankly

confess that we should hesitate before pronouncing against marriage, even when one of the lovers had already exhibited unequivocal signs of insanity or consumption. Nor is this said from any love of paradox; it is quite serious, as the reader will admit, when he considers that the probability of transmission to children is very *uncertain*, and is entirely dependent on the other parent. A man with tubercles already formed may marry one woman who shall bear him children all perfectly healthy; whereas another woman would bear him children all inevitably doomed. It is entirely a question of organic combination; one parent's influence being neutralised or fostered by the influence of another. The same is true, if we take the case of a woman with tubercle marrying a healthy man.

Although everything depends on the constitution of the untainted parent, there is a further difficulty with human beings not felt with animals; we allude to affection, which does not spring up when bidden. You may pair your dogs and cattle according to theory; human beings must pair according to far other impulses. Nevertheless, the parent or physician who has to adjudicate in these delicate cases, may gain some guidance from general principles. We have seen that the predominance of one parent mainly consists in a superior potency which is derived from race, age, health, &c. Thus a young man, in whom the hereditary taint is visible, might fall in love with a woman some few years his senior, who, to superiority of age, might add that of belonging to a more vigorous race. There would be scarcely any danger in such a marriage. But reverse the conditions—let the woman be younger and of a less vigorous race, and marriage would present such probabilities of danger that every means of prevention should be employed. At the best our judgment can be given with great hesitation, for the laws of organic combination, on which parental influence depends, are as yet wholly unknown.—*Westminster Review*.

(*To be continued.*)

METROPOLIS WATER SUPPLY.

THE supply of water to the Metropolis has now reached the enormous quantity of 81 million gallons daily, it having been nearly doubled in the space of six years. The average daily supply of water for all purposes, which in 1850 was 164 gallons per house, is now, in 1856, 246 gallons per house. Seven millions sterling have been expended in the water-works of the Metropolis.

EXTRACTS FROM A LECTURE ON STRYCHNINE.

By STEVENSON MACADAM, Ph.D., F.R.S.E.

(Continued from p. 674.)

THE main difference between the possibility of detecting organic poisons, in contradistinction to inorganic, lies in the more ready and irretrievable changes which happen to organic matter in its passage through, or retention in, the animal system. A poison, such as phosphorus, may be oxidized into phosphoric acid, or arsenious acid may become sulpharsenious acid, and yet they are easily recognisable. We can test the new compound, the product of the change, or, if the operator choose, he can extract therefrom the original substance, and examine the poison itself. But it is not so with the majority of the organic poisons when they suffer a change; and in this respect, strychnine does not stand alone. The animal is an oxidizing agent of the most powerful kind; and if it can so far succeed as to link a few atoms of oxygen to the complex molecule of strychnine, no known process can be resorted to for the purpose of sifting and reuniting the strychnine components in a strychnine atom. The possibility of the oxidation and consequent destruction of a sensible amount of strychnine by the animal, is still an open question; and all that is at present advanced is, that the animal *may* possess that power in a slight degree.

Granting, then, that strychnine, like other organic compounds, may be liable to change in the animal organism, the important question arises, will strychnine, which has been administered in minimum doses, in quantity just sufficient to cause harm to an animal, and by-and-by, in days or weeks, to kill it, will that amount of strychnine be retained in the system of the animal, in such form as to render its detection possible? On this point I have an experiment to adduce. A large-sized TERRIER DOG was fed for two weeks on the flesh of the HORSE previously referred to, and every day during this period he partook of two pounds of muscle. The TERRIER DOG lived and thrived on the flesh, and did not betray the faintest shadow of tetanic symptoms. In this respect he agreed with the maggots which thrive so well on the putrefying DUCK. Of course, there may be something in being born in a strychnine district, such as the maggots were, but this cannot be said in favour of the TERRIER DOG living on the flesh of the HORSE. Inci-

dently I may notice, that these two experiments lead me to regard it as improbable that one animal should be killed by eating the *flesh* of another which had been destroyed by strychnine in the ordinary way. At the same time, I should expect the carnivorous animal to die, provided he partook of such parts as the stomach, the duodenum, or even the blood. These remarks apply only to the remains of animals which have been killed by the introduction of strychnine into the stomach, and do not refer to animals which, after death, have had strychnine placed in incisions made in their muscular system. Now, the TERRIER DOG had for two weeks been receiving strychnine in the minimum of minimum doses, and if the animal system can *sensibly* decompose strychnine, it ought in this instance to have occurred. At first, I thought of killing this animal by violence or by prussic acid, and thereafter examining the various organs for strychnine, but disappointed at the non-appearance of the physiological effects, and believing it unlikely that strychnine could be present in appreciable amount without causing spasms, I unfortunately proceeded to make him the subject of an experiment as to the power of conium to retard or destroy the action of strychnine.

The following are the doses of strychnine and conium administered to, and the effects produced on

THE TERRIER DOG.

0 minute.	1 gr. strychnine, and 2 drops conium, on liver.
25 minutes.	$\frac{1}{2}$ gr. " " 1 drop " "
41 "	Quick motion of limbs.
	Spasms.
42 "	Heavy breathings and spasms.
48 "	Repose.
	A gentle touch or rub occasioned no spasms.
54 "	A smart touch gave rise to most violent spasms and heavy breathings.
56 "	Repose—slowly passed urine.
59 "	Heart stopped beating, and again commenced.
1 hour 3 "	Heart's action ceased.

In this instance I examined (1) the stomach and its contents, (2) the duodenum and its contents, (3) the smaller intestines, (4) the muscle, (5) the lungs, liver, heart, spleen, and kidneys, (6) the blood, (7) the bladder, with a mere trace of urine; and in each separately, I detected strychnine in considerable amount. Now, it must be distinctly observed, that the quantity of strychnine extracted from the tissues and organs of the TERRIER DOG was many times greater than that obtained by me in any other instance. Moreover that strychnine was likewise observed in the smaller intestines, where I could not find strychnine in the only other instance (THE CAT) in which I tested these separately from the duodenum. In all the cases of direct poisoning by strychnine which I have examined, a certain small amount of strychnine was discovered in the animal, and, judging from the amount of the colour test obtained, I should draw the conclusion that the quantity of strychnine lodged in the tissues of the animal was the same in all. But in the instance of the TERRIER DOG, which had undergone the preliminary treatment of eating about 28 lb. of horse-flesh containing strychnine, and was thereafter poisoned by a dose of strychnine not larger than that given to the others, I find a very much larger and extra amount of the alkaloid. The excess of strychnine in the tissue of the TERRIER

DOG over the normal amount present in the tissue of an animal quickly killed by strychnine, must, I presume, have been obtained and retained from the horse-flesh on which the DOG had been previously fed. This point, coupled with the presence of strychnine in the smaller intestines, leads me to believe that had I examined the TERRIER DOG after he had fed on the HORSE, and without using strychnine as the killing dose, I would have found indications of that alkaloid in every part of the system. This experiment is to me conclusive as to the accumulation of strychnine in the animal system, and suggests the important deduction that minimum doses, whilst they may not kill quickly, are the most certain way in which strychnine can be administered, so that it may be afterwards discovered by the chemist.

I am far from considering that the foregoing experiments exhaust the subject of poisoning by strychnine. I commenced the investigation with the earnest desire to make myself conversant with a method by which I could afterwards depend upon, were I called upon to search for strychnine in animal matter. I have all along said as little as possible regarding the physiological effects of the poison, and the condition of the animal system after death, as these are points which I cannot pretend to discuss. I think it right, however, to state, that (1) the animal was always flaccid immediately after death; (2) after tetanus set in, there were periods of repose, during which the animal could be touched gently, and no spasms were occasioned thereby; (3) the condition of the heart at death was various—at times the right side was empty, and at other times both sides of the heart were gorged with blood; and (4) different periods of time marked the commencement and duration of the symptoms.

In summing up these remarks on strychnine poisoning, I deduce from the results of the experiments, the following conclusions:

1. That when administered to the animal, strychnine is absorbed and retained in its system.

2. That strychnine is not sensibly destroyed in the animal system during life, nor by the partial decomposition of the animal tissue consequent on death.

3. That minimum doses of strychnine may cause the animal to exhibit, but partially or not at all, the physiological effects, but such doses are the most favorable for the chemist; so that as the physiological evidence decreases, or sinks to a minimum, the chemical proof increases or rises to a maximum.

4. That tartar emetic, muriate of morphia, extract of hemlock, and conine may retard or relieve the spasms, but they do not in the slightest degree hinder the chemical isolation and detection of strychnine.

5. That by proper treatment, strychnine can be separated from organized tissue and organic matter in general, as easily as any other poison—arsenic not excepted—and much more easily than most other poisonous substances.

6. That, when isolated, strychnine can be distinguished by a special test, which is unerring and most delicate, and which will detect the merest trace.

7. That the decomposition or natural decay of the animal frame *may* cause the destruction of the strychnine, but in this, TIME will no more easily blot out all traces of strychnine, than it will obliterate the mark of the knife of the assassin.

In conclusion, I have two suggestions to make. The first is to our law authorities, and I would ask them in future not to hand the chemist merely fractional pieces of a subject supposed to be poisoned, but to give him over the entire body for chemical analysis; and, for my own part, when called

upon in future to undertake a medico-legal investigation, I will insist on my having the whole subject to work upon, and, if such is not granted me, I will protest against my analysis being regarded as conclusive.

The second suggestion I have to make is to the poisoner. Were I to turn knave chemist, and the poisoner were to ask me what substance he could most certainly employ, whereby he would most surely get rid of his victim and at the same time escape the hands of justice, I would say to him, "Take this poison, or that, or the other; but, as you value your life, my good fellow, don't you try strychnine."

SUPPLEMENT.

Since writing the notes of the Lecture on Strychnine which appeared in the August number of the *Pharmaceutical Journal*, I have been engaged in prosecuting still further the inquiry as to the possibility of detecting strychnine in ordinary and extraordinary circumstances. These later researches I now proceed to record.

The first instance I refer to was that of a SCOTCH TERRIER DOG, which was poisoned by a minimum dose of strychnine. The animal was about eight years old, and though healthy, was not in the best condition. Only one eighth of a grain of strychnine was administered to this dog, and I resolved that come what might—whether the animal died from this small dose or survived its effects—the various organs of its body should be tested for strychnine. The following are the symptoms, &c., exhibited by

THE SCOTCH TERRIER DOG.

0 minute.	Received $\frac{1}{8}$ gr. of strychnine, along with a $\frac{1}{4}$ lb. beef steak.
2 hours	Sudden jerks, during which the head was thrown back; these jerks occurred every two or three minutes during one hour.
3 „	Tetanus set in. At first the spasms were lengthy and severe; but soon they became mere jerks—urine was ejected—violent and heavy breathings.
3 „ 10 minutes.	Repose—a touch, at first gentle, but afterwards severe, failed to bring on the spasms—when motioned to, the dog rose, walked about, lapped up some water, and in every respect behaved itself as if no strychnine had been administered.
3 „ 20 „	The fore legs became convulsed, whilst the hinder legs remained unaffected. In this condition the dog described a skating motion round the room.
3 „ 23 „	Recovered the use of all its limbs and walked about.
3 „ 30 „	Same as occurred at 3 h. 20 m.
3 „ 45 „	Repose, with occasional jerks.
12 „	Death.

Though I have stated twelve hours to be the period at which the above dog succumbed to the influence of strychnine, yet such must only be considered the probable hour of death. After attentively watching the dog for four hours, I left my laboratory for the evening, and returned in ten hours thereafter, being fourteen hours from the commencement of the experiment,

and, as the animal was still sensibly warm, I judged it likely that it must have died about two hours before my return—in other words, in twelve hours from the administration of the alkaloid.

The SCOTCH TERRIER DOG was dissected in about six hours after its death, and on examination by the method detailed in my former paper, strychnine was detected in (1) the stomach and intestines, (2) the muscles, lungs, liver, spleen, kidneys, and heart, (3) the blood, and (4) the urine. The latter was found in the bladder after the death of the dog, so that it is likely it was all secreted after the spasms commenced, at which time, it will be remembered, the then secreted urine was forcibly ejected. The bones of this animal were also examined for strychnine. The process followed was to digest the bones in dilute hydrochloric acid, till all the earthy matter was dissolved out. The solution so obtained was filtered through muslin, placed in an evaporating basin on a sandbath, and raised to a temperature verging on 200° F. Concentrated sulphuric acid was added till it ceased to cause any further precipitation; the mixture was allowed to cool and settle, when the supernatant liquid was siphoned off. To this solution, pulverized chalk was added till the former was nearly neutralized, when the mixture was again allowed to settle, and the liquid being withdrawn, was placed in a bottle, along with animal charcoal, and agitated repeatedly during forty-eight hours. The charcoal was subsequently treated with alcohol, the alcoholic extract evaporated to dryness, and tested with bichromate of potash and sulphuric acid. No *satisfactory* evidence of the presence of strychnine in the bones was obtained.

The above experiments demonstrate that an animal poisoned by a minimum dose of strychnine, may live twelve hours after partaking of that alkaloid, and yet quite distinct evidence of the administration of the poison will be found in the remains of the animal after its death. The comparatively lengthened period during which the SCOTCH TERRIER DOG survived its minimum dose of strychnine, as contrasted with the WHITE DOG or BLACK DOG which received much larger doses, led me at first to surmise that possibly, as a general rule, the rapidity of the physiological symptoms might be taken as an index of the quantity of strychnine actually administered; but the following experiments give no countenance to such an opinion,

Through the kindness of Mr. Williamson, veterinary surgeon, I had placed at my disposal three healthy greyhounds, which had been handed over to him for destruction. These dogs were condemned to death for an over-display of their hunting propensities, in worrying a flock of sheep, and were in every respect in good condition. Two of these three animals formed the subjects of the following experiments:

THE FIRST GREYHOUND—FOUR YEARS OLD.

0 minutc.	3 grains of strychnine were placed on its tongue.
38 minutes.	Showed symptoms of uneasiness.
53 "	Repeated rising and running about—each side being alternately spasmodically affected.
57 "	Heavy breathings.
59 "	Ran about at signal.
1 hour	Leapt from the ground, throwing its head backwards, and fell in a tetanic fit.
1 " 2 "	Repose. Gentle breathing.
1 " 3 "	Spasms. Heavy breathing.
1 " 5 "	Repose. Gentle breathing.
1 " 30 "	Death.

THE SECOND GREYHOUND—FIFTEEN MONTHS OLD.

0 minute.	1 grain of strychnine on tongue.
8 minutes.	Uneasy.
13 ,,	More uneasy.
16 ,,	Very uneasy.
18 ,,	Tetanic spasms.
19 ,,	Heavy breathing.
21 ,,	Jaws clenched. Repose.
23 ,,	Spasms. Heavy breathing.
26 ,,	Repose.
28 ,,	Spasms.
29 ,,	Repose.
33 ,,	Death.

It will thus be seen that the FIRST GREYHOUND, which received three grains of strychnine, resisted the spasmodic symptoms for one hour, and was killed by its large dose in one hour and a half; whilst the SECOND GREYHOUND, which had partaken of one grain of strychnine, was overpowered by tetanus in eighteen minutes, and died in thirty-three minutes. In other words, the dog, with the three grains of strychnine to battle against, withstood their preliminary action, and combated with their fatal designs, for periods of time three times greater than those observed in the instance of the dog which received only one grain of strychnine. Some allowance must of course be granted for the diversity in the ages of the two greyhounds, but, notwithstanding that, I am inclined to believe that no dependence can be placed on the time of the duration of the physiological symptoms, as an index of the total quantity of strychnine given to an animal. Indeed, were the above experiment alone taken as evidence on this point, we would be compelled to assume the rather strange theory, that the results of the action of strychnine on the animal system were *in time* exactly in the inverse ratio of the amount of the poison administered.

I have now more particularly to refer to the influence which the putrefactive agents exert on strychnine, and to the possibility for detecting that alkaloid in the remains of an animal which has been buried for some time. Three years and a half ago, a large dog, about twelve years old, belonging to the Messrs. Doull, of Edinburgh, was supposed to have slightly injured a child, and from the popular notion of the tendency of such a hurt to lead to hydrophobia, should the inflieter of it ever go mad, the dog was ordered by the police to be destroyed. The late proprietors of the animal (who are also my informants) accordingly gave it about four grains of strychnine, made up into a bread pill of the size of a small marble, and enclosed in a bread roll. In three-quarters of an hour spasms came on, and shortly thereafter, being surprised at the length of time the dog lived, the performers of the experiment hit the animal on the head with an iron instrument, and it then ceased struggling. When dead, the dog was placed in a large box and buried. In company with the late proprietors of the dog, and also my assistant, Mr. Allan G. Mackay, I recently exhumed the coffin and its contents. The latter consisted of the bones of the dog, loosely covered with a more or less thick layer of adipocere and hair, intermingled with some dark coloured earthy matter. The shell was found four feet below the surface of the ground, resting on a clayey soil, above which was a stratum of garden earth. On the exterior surface of the bottom of the coffin was found a fatty

matter, of the consistence of butter, which had evidently oozed through the wooden plank, to which it still adhered.

The following parts were examined for strychnine :

- A. Adipocere and hair.
- B. The earthy matter from the region of the stomach.
- C. The earthy matter from all other parts.
- D. The fatty matter on bottom of coffin.
- E. The coffin roughly cleaned.
- F. The bones with loosely adhering decayed matter.

Each of the various parts was treated separately by the oxalic acid and charcoal process previously detailed. The coffin was previously broken into splinters, and the bones smashed into fragments. The other parts were reduced to as fine a state of division as possible. On being tested, strychnine was distinctly detected in the extract from (1) the bones and (2) the coffin, but indistinctly and unsatisfactorily in (1) the adipocere and hair, (2) the earthy matter from the region of the stomach, (3) the earthy matter from other parts, and (4) the fatty substance from the bottom of the coffin. The greater portion of the bones, after being treated with oxalic acid, were placed in dilute hydrochloric acid, and examined in the same manner as that followed with the bones of the SCOTCH TERRIER DOG, and no strychnine was found. Another portion of the bones was treated with dilute hydrochloric acid, and the acid solution nearly neutralized with chalk, and digested with charcoal; whilst a third portion was acted upon by dilute sulphuric acid, nearly neutralized with chalk, and the solution decanted off, and agitated with animal charcoal. In neither instance was strychnine detected. Two points in this inquiry are worthy of notice: the first is, in reference to the death of the dog. It is difficult to come to a conclusion regarding the particular agent which caused its decease. Two forces were at work, viz., the strychnine and the iron instrument. If the strychnine was the immediate cause of death, this case remains as an instance of ordinary poisoning by strychnine, but if the death was hastened by the blow which was dealt externally, then the case assumes a new aspect. Granting that the blow hastened the death, and of necessity we admit that, by so lessening the period during which strychnine could be allowed to diffuse itself through the animal system, we diminish the chances of finding it where it was found in greatest quantity, viz., surrounding or in the bones. The second point I wish to allude to, is the presence of numberless maggots, &c. preying on the remains of this ancient poisoned dog.

As another instance of the possibility of finding strychnine in the remains of an animal poisoned by strychnine, I have to bring forward the results of my examination of the *débris* of a small house terrier destroyed by that poison two years and a half ago. I am indebted for this case to my assistant, Mr. John J. Kyle (a relation of the late proprietor of the dog), who kindly exhumed and brought to me the bones covered with a mouldy substance, as also the earth immediately surrounding these. The examination was conducted as in the previous instance, and strychnine was detected in the oxalic acid extract of the bones. The earth did not yield any evidence of the poison, neither did the bones (after treatment with oxalic acid) when acted on by hydrochloric acid. There were not so many portions to examine in the instance at present under review, as the dog had not been buried in a coffin, so that the various parts were not kept together.

Whilst prosecuting these inquiries, my attention was directed to certain powders, ostensibly sold as *vermin killers*, and which are doubtless very useful for the purposes they are sold for. There are two of such which specially call for notice here, as they are in greater part composed of

strychnine in a finely divided state. I refer to "Hunter's Infallible Vermin and Insect Destroyer," and "Battle's Vermin Killer." Both are regularly sold in paper packages to any one who chooses to ask for them, and pay the sum of threepence. That both "killers" contain severally as much strychnine as is sufficient to be fatal to man, may be at once observed by examining the quantity furnished in each packet; but that there might not be the slightest doubt on the subject, I have given one of Hunter's packages to a GREYHOUND, and a second to an ENGLISH TERRIER DOG. In both instances, the animals were most violently affected by tetanus, and died in a shorter time than any other animal I have poisoned by the pure strychnine itself. Not only so, but on examination of the remains of the animals, strychnine was detected in every part. It is surely time that some restriction should be put upon the sale of strychnine and other deadly poisons, either pure, or mixed with some slight colouring matter. It is notorious that gamekeepers and other servants of landed proprietors have been long in the habit of strewing strychnine embedded in the carcasses of smaller animals, over the lands they protect, for the avowed purpose of destroying vermin; but where so much risk attends the procedure, and the chances of the wrongful application of the strychnine are so many, it appears much to be desired that the present partially restricted sale of pure strychnine for purposes which are not strictly medical, and the altogether free sale of coloured strychnine in packets which do not bear its name, should be at least circumscribed, if not entirely prohibited.

APPENDIX.

My assistant, Mr. John J. J. Kyle, has succeeded in detecting strychnine in the stomach and intestines of three full-grown mice, to which the alkaloid had been administered along with cheese. The process he followed was that of Stas, using chloroform instead of ether. He was not successful in demonstrating the presence of strychnine in the other organs.—*Pharmaceutical Journal*.

SALE OF BAD MEAT IN LONDON.

A COMMITTEE appointed by the Metropolitan Association of Medical Officers of Health have issued a report on the subject of unwholesome meat. The report shows—1. That large quantities of unwholesome meat are sold in London. In the year 1855, 26 live animals, 612 entire carcasses, 696 quarters, 8 sides, and 227 joints of beef, mutton, veal, and lamb were seized as bad in the city, besides great numbers of poultry and game. But much meat which could not be sold in the city is sold in the suburbs. 2. That the signs of bad meat are *colour*, which is either dingy or too bright; *smell*, which is peculiarly sour and sickening; and a *decided wetness of the meat and soft flabbiness*. 3. That there are also special signs of disease. 4. That illnesses are produced by the eating of bad meat, as tape-worm from measly pork, and poisoning from unsound meat badly cooked.

The subject discussed by the Committee is most important; but we must, in all friendliness, say, that if the members of the Committee wish to direct public attention seriously to so great an evil, they must produce a much more vigorous, scientific, and concise report. To those interested in the subject of diseased animal food, we would direct attention to a series of replies by M. Soumille, of Avignon, to certain inquiries issued in 1854 by the Imperial and Central Society of Veterinary Medicine of France.—See *Gazette des Hôpitaux*, October 14th, 1854.—*Journal of Public Health*.

ON THE PREVALENCE OF PLEURO-PNEUMONIA AT THE CAPE OF GOOD HOPE.

A GENTLEMAN with whom we were in conversation the other day, and who had recently returned from the Cape, informs us that pleuro-pneumonia was still producing sad ravages among the cattle there. We extract the following account from the 'Farmer's Magazine.'

"What between the raids of the native tribes, who make terrible onslaught upon the sheep and cattle of the border farmers in the Cape colony, and upon those of the Dutch emigrant boers settled in the free states farther north, and the fearful horse sickness and 'lung-disease' (as it is locally termed) prevailing, the colonists of Southern Africa are suffering dreadfully just now in the losses of their stock.

"Although new and unknown until within a few years in the Cape colony, pleuro-pneumonia has been a fearful scourge in other parts of the globe for some time past. The history of an epidemic among cattle, which raged in Sicily 212 years before the Christian era, described by the poet Scilius Italicus, paints the disease of modern times with almost perfect accuracy. In 1693 the principality of Hesse lost the greater part of its cattle by malignant inflammation of the lungs. The symptoms of the disease clearly show that it commences in the respiratory system, and that the danger consists in the intensity of the inflammatory action in the early stage, and the degree in which the vital power is exhausted; for disease of a malignant and typhoid character usually succeeds.

"The history, nature, pathology, and treatment of the epidemic were well detailed in a paper by Dr. James Mercer, of Edinburgh, which will be found in the 'Farmer's Magazine' (vol. xviii, p. 35) for July, 1848. The opinion of some

that the disease is contagious is contradicted by the experience and observations of others. It is, however, strongly insisted on by the leading medical men and cattle breeders in the Cape colony. Inoculation appears to be held by many as a perfect antidote; but the best that can be said of it is, that it acts as a divertent to the disease while existing in the cattle, in the same manner as a blister acts as a counter-irritant in inflammatory attacks of the human frame. Where, however, little attention can be given to cattle, owing to the paucity of servants, bleeding, purging, and separation of the diseased flock, seem to be the steps adopted by those most wise in the Cape.

“The demand for merchandize in the agricultural districts of the Cape colony and the border states has been considerably checked by the sickness which has so long and so extensively prevailed among the horses and cattle of the farmers. At the opening of the present session of the Cape Parliament, the Governor computed the number of deaths of live stock from this cause at 60,000 horses and 100,000 head of cattle, the value of which, at a moderate computation, cannot be less than between £400,000 and £500,000. A statistical return, published in the frontier papers, gives the following enumeration of the casualties by disease; and this return was not quite complete for the whole of the past year, while, since that period, the additional losses sustained have greatly aggravated the calamity:

Horse Sickness Casualties in 1855.

Western division	.	.	.	41,853
Eastern division	.	.	.	22,997
				<hr/>
				64,850

“Of these there were 23,067 horses, 32,323 mares, and 9460 foals.

Lung Sickness Casualties.

Western district	.	.	.	21,720
Eastern district	.	.	.	71,073
				<hr/>
				92,793

“Of these 33,077 were working oxen, 46,122 breeding cattle, &c., and 13,594 calves.

“We have not before us the present statistics of the live stock in this colonial province of the empire, but the loss must bear a very large centesimal proportion to the whole

number in the colony. This loss has necessarily diminished the resources which are usually available to the agriculturalists for the purposes of trade; and in a colony where cattle and horses are so much in demand, not only for the means of transport, but for all the agricultural operations which in this country and in America are so largely performed by machinery, the loss is the more severely felt.

"The Dutch farmers, whose cattle have been stolen continually by the Kaffirs, have recently retaliated upon these marauders, and made an incursion some 500 strong into the districts of the thieving tribes, and returned with a booty of several thousand head of cattle recovered.

"The horse-disease is very prevalent through most of the districts of the Cape colony. In its development, progress, and successive symptoms, it corresponds generally with the epidemic of last year. It is curiously enough commonly attributed by the Cape farmers to a peculiar miasma in the atmosphere, which, being inhaled, occasions no injury, and possesses no poisonous or deleterious property; but being imbibed in the morning or evening by grass, young leaves, or so-called dog's grass, especially along the banks of the rivers and in swampy parts, becomes the cause of a peculiar product, in consequence of which only a few mouthfuls, taken up by the horse as food, have the same effect as the most rank vegetable poisons, and for which hitherto no active antidote has been discovered. The stabling of horses, and preventing them, on being watered, from taking the least vegetable food, appears thus far to have been the only preventive.

"It is much to be regretted that the Cape farmers, or at least the local journalists, do not make themselves more conversant with the particulars of the disease as prevalent in Europe among cattle and horses, and the means resorted to to lessen the mortality. Much benefit would be gained by a more extensive diffusion of the veterinary, chemical, and agricultural knowledge which has been acquired in Britain and Europe, and in all our colonies.

"Our columns have from year to year been filled with numerous valuable papers and details respecting pleuropneumonia, and the republication of some of these in the colonial journals might afford much valuable information as to the premonitory symptoms, and the general practice in Europe, when the disease prevails."

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Lectures on the Principles and Methods of Medical Observation and Research, for the use of Advanced Students and Junior Practitioners. By THOMAS LAYCOCK, M.D., F.R.S.E., F.R.C.P., Professor of the Practice of Medicine and of Clinical Medicine in the University of Edinburgh. Adam and Charles Black, 1856. Small 8vo, pp. 223.

WE had promised ourselves the pleasure, from which, without presumption, we anticipated solid profit to our readers, of reviewing the new work from Dr. Laycock's pen, with the twofold object of weighing its merits, and generally considering the great theme he has chosen ; but the press of matter we have in hand forbids realization of our plan in the current year, while postponement to the next would defer many of our readers knowing the existence of a work, which should, without delay, become the object of their most diligent perusal and study.

No one acquainted with the rise and progress of veterinary medicine, can doubt that the enormous advantages it has reaped from the sister profession, have been associated with a good share of the evil inherent to servile copy and reasoning by analogy, with undue confidence in the result, without a sufficiently clear appreciation of the errors into which such a mode of investigation, incautiously pursued, is apt to lead. Holding, as we do, these opinions, we always study works on the various branches of human medicine with the intent of testing the value of their precepts by experience in our own calling. We believe that anyone studying Professor Laycock's *Lectures* with this spirit, will coincide with us, that very rarely, in the history of medicine, has a more valuable contribution been made to the real science of pathology. The author has most happily developed the process by which the reasoning faculties should be trained and applied to the study of disease, and we are certain that the members of our own profession will eventually be largely indebted to him, for having afforded them the safest guide in the study of disease, with which we are acquainted.

THE VETERINARIAN, DECEMBER 1, 1856.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE SCOTCH GRADUATES AND THEIR PROFESSIONAL POSITION.

IN the present number we have given insertion to a letter from Mr. Fleming, relating to the *status* possessed by those who, having been educated at the Edinburgh Veterinary College, and received a certificate of their fitness from the Board of Examiners attached to that school, are now practising the veterinary art. In giving a place to this communication, we in no way wish it to be inferred that we agree with the sentiments expressed by the writer; indeed, it is our opinion, that many of his inferences are deduced from incorrect data. Notwithstanding this, we take credit to ourselves for having shown, on all proper occasions, in common with many others, a desire to get rid of the anomalous state of things which unhappily now exists, believing that the stigma complained of by Mr. Fleming as attaching to those who are *non*-graduates of the profession, in accordance with the provisions of the charter, should be removed by the doing away of all difficulties that prevent the pupils of the Edinburgh College from presenting themselves for examination before the legally constituted tribunal. Actuated by these motives, we repeat that we have laboured, both in and out of the Council, to effect an end so much to be desired, although, as yet, without any success. We are deeply persuaded of the injury done to the profession, and know full well the low estimation in which the public holds those who *are in it but not of it*; still, we have never doubted that many who have passed the examination as instituted by the Scotch School, possess all the talent, as well as the other requisites, for their being respected as veteri-

nary practitioners, and therefore we should hail with pleasure the arrival of the day when such persons were admitted among its duly qualified members. All the blame, however, of this not being done, does not rest with the governing power as resident in London, for not a little of it belongs, unfortunately, to the authorities north of the Tweed.

It has often been said that men of ability are to be found in all grades and positions. The mere possession, therefore, of a diploma from the Court of Examiners of the body corporate, can no more give this, than can the certificate of Professor Dick's school deprive them of it. Mr. Fleming may have grounds for his insinuation respecting some of the rejected pupils by the board acting for the Edinburgh school, readily obtaining a diploma from the section of the Court of Examiners appointed by the corporate body for Scotland, but he should remember that if this be true, the converse is no less so; and that men have carried away honours from Scotland, and been paraded in the public prints as examples for imitation, and loudly extolled for their abilities and scientific acquirements, who have been rejected again and again in London, and who it was believed could never have passed the ordeal of an examination as here constituted, and as a last resource they had travelled northward. Such occurrences will ever take place, and they ought not to have been brought forward by one who seeks to do service to the Edinburgh system of granting certificates. We complain of the system only, for we entertain those feelings of friendship and respect for the authorities in the Scotch school who are pleased to adopt it, which would ever restrain us from saying one word against them, of a personally offensive nature. Differing as we do in our views from these authorities, we have felt it our duty to attach ourselves to the Royal College of Veterinary Surgeons, and in general to support its measures, believing that the cooperation of the *schools* with the body corporate, cannot do otherwise than tend to the elevation of the profession in the estimation of the public, and likewise give to

all its deserving members that status which they have a right to claim as a scientific body. The parallel which Mr. Fleming also attempts to draw between "the Edinburgh Veterinary College," and "the Royal Veterinary College of London," has in reality no existence, for the latter named institution grants no certificate setting forth the acquirements or successful examination of the pupil; and it has ever felt, since the obtainment of the charter of incorporation, that it best consulted its own dignity, as well as the interests of the profession, by acting in full accordance with the legal enactments of the charter.

Will any professional friend take this question up, and endeavour, through our journal, to effect a unity of action between the contending interests, based on a determination to advance the cause of Veterinary Science? We are not without hope of the ultimate success of this labour, which has our most ardent wishes for its realization; for we regard the present state of things, not only as a great, but an increasing evil, and one fraught with the most serious danger to the very existence of the profession, as an incorporated body of practical utility.

APPOINTMENT OF A NEW EXAMINER.

IT is not at all times, as journalists, that we can express the accordance of our sentiments with the proceedings of the Council of the Royal College of Veterinary Surgeons. Indeed, we have sometimes been accused of undue severity in the criticisms which we have felt to be incumbent upon us to pass on their public acts. But surely no fault ought to attach to the candid expression of opinions on such a subject as this, when it is remembered that the Council, as the representative of the profession, is invested with full power to legislate for the weal or the woe of the body corporate, and therefore it requires to be watched with a jealous care. It has, however, just taken a step which will tend to give its executive court of examiners an increased importance in public

estimation, and to consolidate its own power. We allude to the appointment of Dr. Sharpey, of University College, as an examiner, in the place of Mr. S. Solly, of St. Thomas's Hospital, whose pressing engagements led him to resign his office.

For the efficient manner in which Mr. Solly at all times performed his duties we cannot speak too highly, and he has the best thanks of the profession, on his retirement, for the zeal he manifested while in its service. Dr. Sharpey ranks amongst the first class of British anatomists and physiologists, and no better name could possibly be found to give weight to the diploma of the student of veterinary medicine.

ROYAL COLLEGE OF VETERINARY SURGEONS.

A QUARTERLY meeting of the Council was held at the offices of the College, Red Lion Square, on Wednesday evening.

PRESENT:—The President, Messrs. Braby, Cherry, Ernes, Jones, Langworthy, Legrew, Turner, Wilkinson, Withers, Professors Spooner, Simonds, and Morton, and the Secretary.

W. STOCKLEY, Esq., the President, in the Chair.

The minutes of the Special General Meeting, held on the 20th of August, having been read, Mr. Gabriel, the Secretary gave a list of the specimens which had been presented to the Museum of the College, by a late Vice-President, Mr. Bowles. On the motion of *Professor Morton*, seconded by *Mr. Ernes*, the thanks of the Council were voted for the same.

The first business which engaged the attention of the Council was the election of a member of the board of examiners, in the place of Mr. Solly, resigned.

Prof. Spooner proposed as the successor to Mr. Solly, Professor Sharpey, lecturer on anatomy and physiology at University College. It was unnecessary for him to make any comments with reference to the qualifications of Professor Sharpey.

The motion was seconded by *Professor Simonds*, who

observed that Professor Sharpey was known throughout all Europe as a most distinguished member of the profession.

A discussion ensued, not with reference to the qualifications of Professor Sharpey, but respecting the propriety of reducing the number of medical examiners on the board as vacancies occurred, and to supply their places with veterinary surgeons. With the view to test the opinions of the Council, an amendment was submitted by *Mr. Ernes* to the effect, that the vacancy should not now be filled up. The amendment was seconded by *Mr. Cherry*.

In reply to the amendment it was remarked by *Professor Simonds*, that it was compulsory upon the Council to elect from the medical profession, the bye-laws providing that the court of examiners should consist of twelve members of the college, and eight of the medical profession. Attention was also called by *Professor Spooner* to the inconvenience which would arise at the ensuing examination in December, should the anatomical and physiological section of the court be left incomplete, and it was further argued that the connection with the medical profession contributed to the reputation of the College.

The mover and seconder of the amendment disclaimed any intention to undervalue the attainments of *Professor Sharpey*, but they submitted that the time had come when the examinations should be conducted chiefly by members of the college. They treated the subject as a matter of principle, and thought it desirable that an opportunity should be given for the entire Council to express their opinion.

The amendment was opposed by *Mr. Turner*, *Professor Morton*, and others, and after the President had expressed himself in favour of maintaining as closely as possible the connection between the two professions, the question was put to the vote, when the amendment was rejected by 7 to 2.

Prof. Sharpey was then elected *nem. con.*, *Mr. Ernes* and *Mr. Cherry* declining to vote.

The next business was with reference to the communication from Mr. Newdegate, chairman of the governors of the Royal Veterinary College, touching the reduction of the examination fee. It was stated by the secretary that no immediate answer to that communication was sent, and that a deputation was some time afterwards appointed to wait upon the governors. On the day when the deputation did so, there were not sufficient governors present to form a *quorum*, consequently, the deputation could not be received. At a subsequent meeting of the Council, it was resolved to send a

written answer to Mr. Newdegate's communication and also to seek another interview with the governors, accordingly, "the deputation attended at the Royal Veterinary College, on Tuesday, October 14th, and on sending a message to the governors to announce they were in waiting, Professor Spooner, as Secretary of the Royal Veterinary College, came from the Board of Governors, and asked if the deputation was furnished with a written reply to Mr. Newdegate's letter, as if not, the governors did not feel authorised to receive them." The deputation was not received, and the consequence was, they were again foiled in the accomplishment of their object. It was stated, that the committee of governors did not know that a reply had been sent to Mr. Newdegate, nor was this gentleman aware that the deputation waited upon the committee.

A discussion arose as to whether the affair should be allowed to drop altogether, or commenced *de novo*. Mr. Cherry and Mr. Braby were in favour of postponing it to a future meeting of the Council, on the ground of the importance of the principle involved, and a resolution to that effect was submitted. The views of these gentlemen were combatted by Professor Spooner, Professor Simonds, Mr. Wilkinson, Mr. Turner, and others, and it was eventually decided, by eight to two, that the Council should immediately proceed to the consideration of the proposal to reduce the fee, with the view to a final answer being given to Mr. Newdegate's letter.

The discussion was commenced by Mr. Ernes, who said he had always been of opinion that the examination fee was too high, and that they had lost the support of the Scotch school in consequence. Mr. Braby, Mr. Cherry, and Mr. Turner were of opinion that the reduction of the fee would not be attended with that advantage to the pupils which Mr. Newdegate supposed, while it would materially cripple the resources of the College. A formal resolution was moved by Mr. Turner, and seconded by Mr. Cherry, in substance, that the Council did not think it eligible to reduce the fee.

Professor Spooner spoke at some length against the resolution. He had always thought the fee too high, and that in demanding such a sum from the pupil the Council were exercising might over right. Before the Charter was obtained the fee was three guineas, and by many that was thought too much. In the Charter it was expressly stated that the maximum fee should be ten guineas, and the Council, availing themselves of this proviso, very soon charged the maximum of ten guineas. The consequence

was, that should it be determined at any future period to increase the duties of the examiners, which would involve an augmentation of remuneration, they would have no resource to fall back upon. If the fee were reduced to five guineas, the Royal Veterinary College might be in a position to appoint an additional teacher in some other branch of science, and he asked whether that would not be an advantage to the pupil, as well as a means to increase the reputation and efficiency of the College. He believed, from the objections urged by the Duke of Buccleuch, and other gentlemen connected with the Highland Agricultural Society, that the present high fee kept Scotch pupils away, and not only did this, but that it had led to the establishment and success of Mr. Dick's examination, whose pupils are admitted into the army and the East India service as equals with the members of the Veterinary College.

It was moved by *Mr. Ernes* that the fee should be reduced to five guineas, and he suggested that, if the fees did not yield sufficient to meet the expenses, the deficiency should be made up by donations. Upon this the *Secretary* remarked, that when an attempt was made to collect donations, they only succeeded in getting from £25 to £30 annually out of the 1400 members of the profession.

Mr. Ernes' resolution was negatived by seven to four, and a motion to reduce the fee to seven guineas, submitted by Professor Simonds, was likewise rejected by six to five. The original motion, that no reduction of the fee should take place, was then put, and carried by seven to four.

The statement of the accounts, for the last two quarters, was next read, showing a balance in hand in July, of £499 2s. 7d., and in October, of £364 16s. 7d. On the motion of *Mr. Langworthy* the accounts were passed.

The Registrar's Report announced four deaths during the quarter—viz. C. E. Ashworth, of Holywell, who passed in 1843; W. Phillips, of Monk's Eleigh, in 1846; J. Stoddart, of Whitehaven, in 1839; and J. Siddall, of the Royal Horse Guards, in 1808.

Messrs. *Langworthy*, *Legrew*, and the *Secretary* were named as the Committee of Supervision, and the proceedings terminated.

J. H. LANGWORTHY.

J. LEGREW, V.S. 2d. Life Gds.

E. N. GABRIEL.

Veterinary Jurisprudence.

DAVENTRY COUNTY COURT, *Monday, Aug. 25.*—Before THOMAS NICKS, Esq., who, in the absence of F. DINSDALE, Esq., presided as judge.

John Goff, jun., farmer, Weedon, *v.* William Bird, miller, Everdon. For breach of warrantry on the sale of a horse, £36. This cause, which was tried before a jury, occupied the attention of the court upwards of five hours. It appeared to excite unusual interest, and during the hearing of the case the hall was densely crowded. Mr. Burton appeared for the plaintiff, and Mr. T. Gery for the defence.

The Plaintiff examined:—On the 8th July last purchased the horse in question of defendant. George Eary was present. Defendant, Eary, and witness went into the house of the latter together. Plaintiff said to defendant, “Have you come to sell me the horse—is he all right?” He replied, “He is all right, and never had a tittle the matter with him in his life; I’ll warrant him all right and sound.” Went to defendant’s house, where the horse was saddled and brought out. Defendant’s son, who was present, declined to ride the horse, and Eary rode up and down about 100 yards. Afterwards rode the horse himself about a quarter of a mile and back. Perceived a grunting, which, on his return, he mentioned to defendant, who replied, “Oh, he is all right; I warrant him that.” Witness said, “Unless you do so, I’ll have nothing to do with him,” and added, “I’ll give you £36.” Defendant asked, “Will you take him as he is?” Witness replied, “No; I won’t have him without you warrant him all right.” Defendant said, “I am not going to warrant him for a year or two.” Witness replied, “If he holds right for a week or so I shall be satisfied.” On the 24th July found the horse ill, and sent for the farrier. In the mean time took from the horse about one quart of blood. Eary came and took the horse home with him. Went up to see the horse afterwards, and found him a little better. About two hours afterwards saw him again; he lay on his back. Sent for defendant twice, but he did not come. The horse died, and Eary opened him in presence of witness, and found him full of water.

Cross-examined: Had told all that took place about the bargain. Nothing was said about warranting the horse for a day or a week. Part of the conversation took place in the

street and part at witness's house. Bird never said he would warrant the horse for a day after he left. The horse met with no accident while in plaintiff's possession, but fell lame a week and two days after he had him. The horse worked one day about two hours in the plough.

George Eary, blacksmith and farrier, Everdon, deposed that he was at plaintiff's on the 8th of July last, attending a pig, when defendant came into the yard, and witness went with plaintiff and defendant into Mr. Goff's house. Mr. Goff inquired of Bird the price of his horse. Bird replied £40. They had some conversation, and Goff asked Bird, before making an offer, whether the horse was all right and sound. He answered that it was all right, and had never had anything the matter with it while in his possession. Mr. Goff expressed a wish to see the horse, and, accompanied by witness and defendant, went to Mr. Bird's for that purpose. Rode the horse up and down the street each way, about 100 yards, and perceived that he threw up his head, and made a grunting noise. On his return Mr. Goff asked witness how he liked the riding of the horse. Witness said, "Well, get on him, and then you may please yourself;" upon which Mr. Goff got on the horse and rode him about a quarter of a mile. Witness and Bird were standing together. On Mr. Goff's return, he said "I don't like the grunting." Bird replied, "The horse is all right, and I will warrant him right; it is only a full belly; there is nothing the matter." Witness said the horse was sound in wind and limb. Bird added, "Yes, Goff, I will warrant him sound." Ultimately Bird agreed to take £36 for the horse, and after the close of the bargain said, "Goff, you don't expect me, after you have rattled him about, to be answerable for a year?" Goff replied, "No; if he is all right for a week or so after I have laid my leg over him a few times I shall be very well satisfied." Afterwards, when I and Mr. Goff went away, we met Mr. Bird's son, who asked, "Have you dealt?" He was not near enough during the bargain to hear anything about it. On the 17th July, Mr. Goff called upon witness, and asked him to examine the horse, as he was lame. Examined him, found him lame, and advised rest. Observed that the horse still grunted. On the 24th was called in again to see the horse. Found him very ill, and took him, at Mr. Goff's request, to witness's own house. On his way saw Bird, who expressed his regret that anything had happened to the horse. Gave him an opening drink, and took from him about two quarts of blood. Did not leave the horse twenty minutes; he dropped down dead in witness's

presence. Sent for both plaintiff and defendant. Goff came ; Bird did not. Opened the horse carefully. Water followed the knife to the extent of seven or eight gallons. The heart and lungs were healthy. Opened the intestines, and found no symptoms of constipation. Thought the water caused the grunting.

Cross-examined : Could not tell how the water came into the horse.

Mr. John Mountfort, grazier, Everdon, saw the horse both before and after death. The grunting noise was of an unusual character. Was of opinion that the horse died from dropsy.

Joseph Birt, *George Watts*, and *John Watts*, gave confirmatory evidence of the state and fair usage of the horse while in Mr. Goff's possession.

Samuel Sharman Garrett, veterinary-surgeon, Northampton : Was a member of the Veterinary College of London, and had practised for twenty-two years in this county. Judging from the facts given in the evidence of Eary, the horse died from dropsy in the abdomen. From the subsequent death and appearance of the horse when opened, was of opinion that the disease existed at the time of purchase.

Matthew Bowles Brake, veterinary-surgeon, Northampton : Had practised for fourteen or fifteen years in this and other counties. Had heard the whole of the evidence, and, assuming it to be true, was of opinion that the horse was unsound at the time of purchase, and from the description given of the horse when opened, attributed the death of the animal to dropsy.

Cross-examined : Had never heard of dropsy terminating fatally in twenty-four hours. Was of opinion that the grunting indicated unsoundness.

The Defendant examined : This witness, after giving the less important particulars of the bargain, stated that the plaintiff asked defendant to warrant the horse for a week. Witness replied, "I won't warrant him for a day ; I will sell him out and out, and I would rather keep him." Eary said, "He wants no warranty ; he is as sound as any horse in England." Goff said, "I only want a week's warranty." Never heard any grunting ; never rode the horse.

Cross-examined : Did not hear Mr. Goff say anything before witness got off the horse. He said nothing in witness's hearing about the grunting. After he got off the horse, he said something about his wind. Witness replied, "the horse is all right, as far as I know, and he has had nothing the matter with him since I have had him." Did not say, "Goff, I will

not warrant the horse, while you are rattling him about, for a year or two." Did not warrant the horse at all. Did not say, when Goff complained of the breathing, that it was on account of the horse's full belly. If witness did say so he had forgotten it. Thought he had heard of the grunting of the horse since it was sold to Mr. Goff. Might have heard it, but could not say for certain. Received a message to go and see the horse cut up, but refused. Witness's two sons and Wright were present when the horse was sold. Witness's wife was present, in and out of the room, when they were settling for the horse.

Re-examined: Had no doubt his wife and son were present when the horse was settled for. The wind was the only thing Goff complained of.

Mary Bird (wife of the defendant): Was in a passage close to the room door in which the sale was effected, and could hear every word as well as if she had been in the room. She confirmed her husband's version of the transaction.

George Bird and *Josiah Bird*, sons of the defendant, gave evidence confirmatory of the defendant's statement, *Josiah Bird* admitting, on cross-examination, that he had heard the horse grunt, but could not say when.

William Wright, wheelwright, Everdon, said he was in the street on the 8th July last, and saw Mr. Bird and Mr. Goff on the bridge. Saw Eary and Goff ride the horse. Heard Goff ask Bird if he would warrant the horse. Bird answered, "Not a day."

Cross-examined: Was near the arch, and did not take particular notice of what was said. Heard nothing about the grunting.

William Blunsom examined: Had practised farriery for forty years. If the horse had had seven or eight gallons of water in him it would have shown externally. No mistake could have been made as to inflammation. The water could not have been as described without producing disease of the lungs. The evidence he had heard was not sufficient to enable a professional man to give a decided opinion.

Cross-examined: If it were true that the grunting took place, and seven or eight gallons of water were found, the water might perhaps cause the grunting, and such grunting would be an unsoundness. Had heard the evidence given by the professional witnesses in this case, and, if the facts were true as stated, agreed with them in opinion.

Verdict for the *Plaintiff*; damages, £36.

MISCELLANEA.

CHILBLAINS AND CHAPS.

THE following application is strongly recommended: It is to be applied by means of a pencil, and is to be renewed as often as required, so as to protect the parts from the air, until the cure, which is speedy, is completed: Collodion 30, Venice turpentine 12, castor oil 6, mix.

SEXTON'S ANTI-CORROSIVE CAUSTIC HOLDER

Is formed of vulcanized material, and is very neat and useful. The holder is not acted upon by the caustic, which, by a simple contrivance, can be regulated to any length, and used even to the smallest remaining portion.

ARMY APPOINTMENTS.

WAR DEPARTMENT; *Nov. 11th, 1856.*

ROYAL ENGINEER FIELD EQUIPMENT. — Thomas Walton Mayer, gentleman, to be veterinary surgeon.

Nov. 14th.

ROYAL HORSE GUARDS. — Veterinary surgeon John Byrne, from the 4th Light Dragoons, to be veterinary surgeon, *vice* Siddall, deceased.

4TH LIGHT DRAGOONS. — Probationary veterinary surgeon Herbert Sewell, to be veterinary surgeon, *vice* John Byrne, appointed to the Royal Horse Guards.

OBITUARY.

WE regret to have to record the death of Mr. J. Siddall, of the Royal Horse Guards. Mr. Siddall was an old member of the profession and a respected officer in Her Majesty's service, having obtained his diploma in March, 1808, and entered upon his duties as an army veterinary surgeon shortly afterwards.

To this we have also to add the deaths of three others from our ranks, namely:

Mr. C. W. Hawes; Tewkesbury.

Mr. Ephraim Howes; Tacolneston, Norfolk, and

Mr. Richard Shephard; Cropton, near Pickering.

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